



JACOBS  
UNIVERSITY



**Study Program Handbook**

# **Global Economics and Management**

Bachelor of Arts

## **Subject-specific Examination Regulations for Global Economics and Management (Fachspezifische Prüfungsordnung)**

The subject-specific examination regulations for Global Economics and Management are defined by this program handbook and are valid only in combination with the General Examination Regulations for Undergraduate degree programs (General Examination Regulations = Rahmenprüfungsordnung). This handbook also contains the program-specific Study and Examination Plan (Chapter 6).

Upon graduation, students in this program will receive a Bachelor of Arts (BA) degree with a scope of 180 ECTS (for specifics see Chapter 6 of this handbook).

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### 1.1 Concept

#### 1.1.1 The Jacobs University Educational Concept

Jacobs University aims to educate students for both an academic and a professional career by emphasizing four core objectives: academic quality, self-development/personal growth, internationality and the ability to succeed in the working world (employability). Hence, study programs at Jacobs University offer a comprehensive, structured approach to prepare students for graduate education as well as career success by combining disciplinary depth and interdisciplinary breadth with supplemental skills education and extra-curricular elements.

In this context, it is Jacobs University's aim to educate talented young people from all over the world, regardless of nationality, religion, and material circumstances, to become citizens of the world who are able to take responsible roles for the democratic, peaceful, and sustainable development of the societies in which they live. This is achieved through a high-quality teaching as well as manageable study loads and supportive study conditions. Study programs and related study abroad programs convey academic knowledge as well as the ability to interact positively with other individuals and groups in culturally diverse environments. The ability to succeed in the working world is a core objective for all study programs at Jacobs University, both in terms of actual disciplinary subject matter and also to the social skills and intercultural competence. Study-program-specific modules and additional specializations provide the necessary depth, interdisciplinary offerings and the minor option provide breadth while the university-wide general foundation and methods modules, mandatory German language requirements, and an extended internship period strengthen the employability of students. The concept of living and learning together on an international campus with many cultural and social activities supplements students' education. In addition, Jacobs University offers professional advising and counseling.

Jacobs University's educational concept is highly regarded both nationally and internationally. While the university has consistently achieved top marks over the last decade in Germany's most comprehensive and detailed university ranking by the Center for Higher Education (CHE), it has also been listed by the renowned Times Higher Education (THE) magazine as one of the top 300 universities worldwide in 2018. The THE ranking is considered as one of the most widely observed university rankings. It is based on five major indicators: research, teaching, research impact, international orientation, and the volume of research income from industry.

#### 1.1.2 Program Concept

The Global Economics and Management (GEM) study program is among the longest standing programs at Jacobs University. In direct line with the university's chief mission, the GEM program delivers high quality research and teaching to train students from all over the world in the economic analysis and managerial skills they need to understand and address global, complex problems affecting markets, organizations and society. Students explore questions of utmost importance to contemporary economies and public affairs, such as: How do economic agents both contribute to and are impacted by global economic dynamics such as trade, growth and inequality? How do governments respond to the challenges of climate change and environmental sustainability? And how do economic agents bring about and purposefully manage institutional change?

The purpose of the GEM study program is to enable graduates to take an active role in shaping future economic and social processes. This program therefore combines the disciplines of Economics and Management Studies. Economics studies examine how individuals, households, firms and governments make decisions regarding the production, distribution, acquisition and allocation of scarce resources. Management studies the design and administration of firms, nonprofits and public organizations, as well as the consequences of managerial actions and decisions on individuals, society and economies. Students discover the mechanisms that stand between globalized economic dynamics, business interests, and managerial action to prepare them for future responsibilities in an increasingly interconnected world, shedding light on issues such as inequalities, economic development, global trade, or climate change. The scientific education offers a solid foundation in quantitative techniques and introduces students to qualitative research methods as well. Work in seminars is designed to develop skills in professional communication, writing and problem-solving and to help students develop their own academic and professional profile.

Our learning and teaching methods rely in form on a mix of lectures, seminars and tutorials. The lectures and seminars provide introductions to fundamental knowledge in general fields of economics and management. We encourage interactivity during these sessions through a variety of inputs, including group discussions of academic papers, case studies using the Harvard case method, exercises, role-plays, and workshop-like sessions on writing and presenting skills. Accompanying tutorials help the students to prepare and review the material and to prepare the examinations.

## **1.2 Specific Advantages of the Global Economics and Management program at Jacobs University**

Jacobs University students can choose to specialize in GEM or to combine their GEM studies with a minor from another discipline at Jacobs University, like for example International Relations: Politics and History, Integrated Social Sciences, Psychology, Earth and Environmental Sciences, Industrial Engineering and Management, or Computer Science. Upon completing the program, typical GEM graduates have acquired knowledge in their academic fields of choice, developed scientific rigor and ethics, reflexivity, and the capacity to integrate multiple disciplines, points of view and opinions into their decisions. These qualities qualify them naturally for graduate studies in the fields of economics, development studies, management, and business administration, as well as for positions as consultants, analysts and in business development more generally.

Students in the BA GEM program discover the mechanisms that stand between globalized economic dynamics, business interests, and managerial action. Economics and management are two disciplines that complement each other. In most professions, both perspectives are needed. Managers need to understand the greater economic environment in which they operate; national and international governmental institutions need to understand how private organizations and businesses are run. With students from more than 100 countries on the Jacobs University campus, GEM graduates are in the best environment to discuss and understand why the preceding conditions and outcomes of economic and managerial decisions can be so different in different parts of the world.

Our first year courses include introductory modules on economics, international business, and quantitative skills and methods. In the second year, the curriculum inspects global policy questions, such as economic development, environmental challenges, the globalization of economic agents and institutions, and the management of increasingly diversified organizations. In the third year, students delve deeper into selected, contemporary topics and techniques of utmost importance for their career and future studies, including modules on information economics, advanced econometrics, and public

and non-profit management, as well as modules from other programs. Thereby, our students come to appreciate that political, social, cultural, and technological framework conditions have a decisive influence on economic outcomes on all continents.

The Bachelor program Global Economics and Management has received excellent ranking results in the most recent university ranking conducted by the Center for Higher Education (CHE, see <https://ranking.zeit.de/che/de/fachbereich/1600776?ab=3>). The CHE ranking is based on the comparison of more than 300 universities and other higher education institutions. The main indicators are teaching quality, research, and study environment.

### **1.3 Program-Specific Educational Aims**

#### **1.3.1 Qualification Aims**

The GEM study program awards a Bachelor of Arts degree. This program is interdisciplinary and does not compare to a classical economics degree. The GEM study program seeks to explain how economies and economic agents operate and coordinate their interactions, both economically and managerially. The program is more oriented towards economic and management theories and policy discussions than towards mathematics. The scientific education provided by the program includes both quantitative and qualitative approaches, with a focus on quantitative techniques (statistics, R and econometrics).

#### **1.3.2 Intended Learning Outcomes**

By the end of the program, students will be able to:

- contrast the interests and activities of private business organizations, governments, international organizations, civil society associations and non-profit organizations;
- evaluate economic, political and societal problems using economics and management theories and scientific reasoning, specifically: statistical, mathematical, case-study based, econometrical, and qualitative reasoning;
- apply economic theories and analyses to issues of wide public and professional concern;
- apply business and management theories to basic dimensions of the conduct of business across sectors;
- articulate the relationships between business decisions, economic policies, and national and international public affairs;
- identify the appropriate approach to deal with business and institutional actors depending on their interests;
- distinguish differences in national and regional perceptions of and approaches to economic reasoning;
- apply social and intercultural competencies needed to take on responsibility in diverse, international teams with competing and overlapping interests;
- outline and discuss their arguments and the ones of others using a combination of economic, organizational and institutional analyses;
- assess and interpret relevant information for policy analyses in selected topics of micro- and macroeconomics;
- describe the state of published knowledge in economics and management;

- explain real-life situations and problems of organizations and industries combining key contemporary theories of economics and management with methods and insights of other disciplines
- communicate economic and managerial analysis and solutions appropriately to their audience;
- investigate economic and managerial problems and undertake scientific or applied research projects;
- draw scientifically-founded conclusions that consider social, professional, scientific and ethical insights;
- engage ethically with academic, professional and wider communities and to actively contribute to a sustainable future, reflecting and respecting different views.

## 1.4 Career Options

With its combination of economics and management, students acquire solid labor-market qualifications for junior management positions with responsibilities in function-specific tasks and projects within areas of employment such as business development, sales and marketing, human resource management, organizational development, strategy and technology consulting, as well as for analyst positions in these fields or in specific industries. In the last years, our graduates obtained internships and positions in a variety of institutions, including the World Bank, MIT, or the Harvard Kennedy School, and at companies such as Volkswagen, Deutsche Bank, Ernst & Young, Deutsche Börse, KPMG, Henkel, Daimler, LinkedIn, Microsoft, Uber, Vodafone, Zalando or Deloitte, as well as in various startups. A degree in GEM will also equip students with transferable skills that will allow them to move into other areas of employment in a variety of employers such as national and multi-national companies, governmental agencies, NGOs, international organizations, think tanks, special interest groups, or research institutions.

The GEM program has taken JU's graduates onto a rich diversity of career paths. The academic rigor of the program prepares students for highly ranked graduate programs. GEM alumni have a strong track record with leading institutions around the world, such as the universities of Oxford, Cambridge, Edinburgh, St Gallen, Bonn, Munich (TUM) and Mannheim, and graduate schools such as ESADE, Copenhagen Business School, BI Norwegian Business School, Hertie School of Governance, London Business School, and the London School of Economics.

Due to their experience of working and living with students from more than 100 countries on Jacobs University's international campus, GEM graduates are well prepared to take on responsibility in intercultural work environments. What is more, the Jacobs Career Services Center offers students, amongst others, access to an exclusive internship program, individual career counseling, professional skills seminars, an online job portal, and employer networking during on-campus recruiting events.

## 1.5 Admission Requirements

Admission to Jacobs University is selective and based on a candidate's school and/or university achievements, recommendations, self-presentation, and performance on required standardized tests. Students admitted to Jacobs University demonstrate exceptional academic achievements, intellectual creativity, and the desire and motivation to make a difference in the world. The following documents need to be submitted with the application:

- Recommendation Letter

- Official or certified copies of high school/university transcripts
- Educational History Form
- Standardized test results (SAT/ACT/TestAS) - if applicable
- ZeeMee electronic resume (optional)
- Language proficiency test results (TOEFL, IELTS or equivalent)

German language proficiency is not required, instead all applicants need to submit proof of English proficiency.

For any student who has acquired the right to study at a university in the country where she/he has acquired the higher education entrance qualification Jacobs University accepts the common international university entrance tests as a replacement of the entrance examination. Applicants who have a subject-related entrance qualification (fachgebundene Hochschulreife) may be admitted only to respective study programs.

For more detailed information about the admission visit: <https://www.jacobs-university.de/study/undergraduate/application-information>

## **1.6 More Information and Contact**

For more information please contact the study program chair:

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Telephone: +49 421 200-3491

or visit our program website: <http://ba-gem.user.jacobs-university.de/>

## 2 The Curricular Structure

### 2.1 General

The curricular structure provides multiple elements for enhancing employability, interdisciplinarity, and internationality. The unique Jacobs Track, offered across all undergraduate study programs, provides comprehensive tailor-made modules designed to achieve and foster career competency. Additionally, a mandatory internship of at least two months after the second year of study and the possibility to study abroad for one semester give students the opportunity to gain insight into the professional world, apply their intercultural competences and reflect on their roles and ambitions for employment and in a globalized society.

All undergraduate programs at Jacobs University are based on a coherently modularized structure, which provides students with an extensive and flexible choice of study plans to meet the educational aims of their major as well as minor study interests and complete their studies within the regular period.

The framework policies and procedures regulating undergraduate study programs at Jacobs University can be found on the website (<https://www.jacobs-university.de/academic-policies>).

### 2.2 The Jacobs University 3C Model

Jacobs University offers study programs that comply with the regulations of the European Higher Education Area. All study programs are structured according to the European Credit Transfer System (ECTS), which facilitates credit transfer between academic institutions. The three-year undergraduate program involves six semesters of study with a total of 180 ECTS credit points (CP). The undergraduate curricular structure follows an innovative and student-centered modularization scheme - the 3C-Model - that groups the disciplinary content of the three study years according to overarching themes:

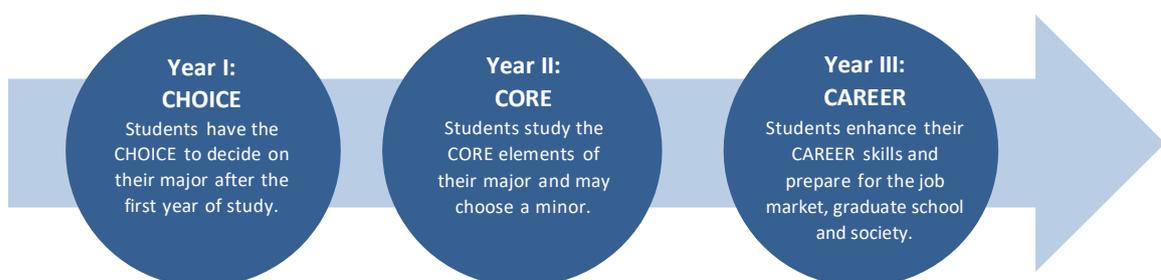


Figure 1: The Jacobs University 3C-Model

#### 2.2.1 Year 1 – CHOICE

The first study year is characterized by a university-specific offering of disciplinary education that builds on and expands upon the students' entrance qualifications. Students select introductory modules for a total of 45 CP from the CHOICE area of a variety of study programs, of which 15-30 CP will be from their intended major. A unique feature of our curriculum structure allows students to select their major freely upon entering Jacobs University. The Academic Advising Coordinator offers curricular counseling

to all Bachelor students independently of their major, while Academic Advisors support students in their decision-making regarding their major study program as contact persons from the faculty.

To pursue Global Economics and Management as a major, the following CHOICE modules (30 CP) need to be taken as mandatory modules:

- CHOICE Module: Microeconomics (7.5 CP)
- CHOICE Module: Macroeconomics (7.5 CP)
- CHOICE Module: Introduction to International Business (7.5 CP)
- CHOICE Module: Introduction to Finance and Accounting (7.5 CP)

These lecture-tutorial combinations provide the students with a general overview about basic concepts and theories in economics and business. In the associated tutorials, students have the opportunity to recess the material taught in the lectures through discussions of related concepts, policy problems, or scientific studies, and through cases and exercises.

The remaining CHOICE modules (15 CP) can be selected in the first year of studies according to interest and with the aim to allow a change of major until the beginning of the second year, when the major choice becomes fixed.

#### 2.2.1.1 Major Change Option

Students can still change to another major at their beginning of the second year of studies if they have taken the corresponding mandatory CHOICE modules in their first year of studies. All students must participate in a seminar on the major change options in the O-Week and consult their Academic Advisor in the first year of studies prior to changing their major.

The possible options and requirements for GEM students are listed below:

- All GEM students have the option to change to International Business Administration (IBA) after the first year of studies.

Students that would like to retain a further option are strongly recommended to additionally register for the CHOICE modules of one of the following study programs in their first year:

- Psychology  
CHOICE Module: Essentials of Cognitive Psychology (7.5 CP)  
CHOICE Module: Essentials of Social Psychology (7.5 CP)
- International Relations: Politics and History (IRPH)  
CHOICE Module: Introduction to International Relations Theory (7.5 CP)  
CHOICE Module: Introduction to Modern European History (7.5 CP)
- Integrated Social Sciences (ISS)  
CHOICE Module: Introduction to the Social Sciences 1: Politics and Society (7.5 CP)  
CHOICE Module: Introduction to the Social Sciences 2: Media and Society (7.5 CP)
- Earth and Environmental Studies (EES)  
CHOICE Module: General Earth and Environmental Sciences (7.5 CP)  
CHOICE Module: General Geology (7.5 CP)

- Industrial Engineering and Management (IEM)  
CHOICE Module: General Industrial Engineering (7.5 CP)  
CHOICE Module: General Logistics (7.5 CP)

### 2.2.2 Year 2 – CORE

In their second year, students take a total of 45 CP from a selection of in-depth, discipline-specific CORE modules. Building on the introductory CHOICE modules and applying the methods and skills acquired so far (see 2.3.1), these modules aim to expand the students' critical understanding of the key theories, principles, and methods in their major for the current state of knowledge and best practice.

To pursue Global Economics and Management as major, at least 30 CP from the following mandatory elective CORE modules need to be taken:

- CORE: Development Economics (7.5 CP)
- CORE: Environmental and Resource Economics (7.5 CP)
- CORE: Comparing Economic Systems (7.5 CP)
- CORE: International Economics (7.5 CP)
- CORE: Marketing (7.5 CP)
- CORE: Organization and Human Resource Management (7.5 CP)

These modules offer a combination of seminar and tutorial. Each module builds on the contents of the first-year modules and delve into its respective topic through a mix of lecture inputs, paper discussions, and interactive group work. In the second year of studies, examinations are increasingly oriented towards essays and presentations.

15 CP in CORE modules (15 CP) can be selected in the second year of studies according to interest and with the aim to pursue a minor in a second field of studies.

#### 2.2.2.1 Minor Option

GEM students can take CORE modules (or more advanced Specialization modules) from a second discipline, which allows them to incorporate a minor study track into their undergraduate education, within the 180 CP required for a bachelor's degree. The educational aims of a minor are to broaden the students' knowledge and skills, support the critical reflection of statements in complex contexts, foster an interdisciplinary approach to problem-solving, and to develop an individual academic and professional profile in line with students' strengths and interests. This extra qualification will be highlighted in the transcript.

The Academic Advising Coordinator, Academic Advisor, and the Study Program Chair of the minor study program support students in the realization of their minor selection; the consultation with the Academic Advisor is mandatory when choosing a minor.

As a rule, this requires GEM students to:

- select two CHOICE modules (15 CP credits) from the desired minor program in the first year and
- substitute two of the mandatory elective GEM CORE modules (15 CP credits) in the second year with the default minor CORE modules of the minor study program.

The requirements for each specific minor are described in the handbook of the study program offering the minor (Chapter 3.2) and are marked in the respective Study and Examination Plans. For an overview of accessible minors, please check the Major/Minor Combination Matrix which is published at the beginning of each academic year.

Note: For students pursuing GEM as a major it is not possible to pursue International Business Administration (IBA) as a minor; students must declare whether they follow either GEM or IBA as a major at the beginning of the second year of studies.

### 2.2.3 Year 3 – CAREER

During their third year, students prepare and make decisions about their career path after graduation. To explore available choices and to gain professional experience, students undertake a mandatory summer internship. The third year of studies allows GEM students to take Specialization modules within their discipline, but also focuses on the responsibility of students beyond their discipline (see Jacobs Track).

The 5th semester also opens a mobility window for a diverse range of study abroad options. Finally, the 6th semester is dedicated to fostering the students' research experience by involving them in an extended Bachelor thesis project.

#### 2.2.3.1 Internship / Start-up and Career Skills Module

As a core element of Jacobs University's employability approach students are required to engage in a mandatory two-month internship of 15 CP that will usually be completed during the summer between the second and third years of study. This gives students the opportunity to gain first-hand practical experience in a professional environment, apply their knowledge and understanding in a professional context, reflect on the relevance of their major to employment and society, reflect on their own role in employment and society, and find a professional orientation. The internship can also establish valuable contacts for the students' Bachelor's thesis project, for the selection of a Master program graduate school or further employment after graduation. This module is complemented by career advising and several career skills workshops throughout all six semesters that prepare students for the transition from student life to professional life. As an alternative to the full-time internship, students interested in setting up their own company can apply for a start-up option to focus on developing of their business plans.

For further information, please contact the Career Services Center (<http://www.jacobs-university.de/career-services/contact>)

#### 2.2.3.2 Specialization Modules

In the third year of their studies, students take 15 CP from major-specific or major-related, advanced Specialization modules to consolidate their knowledge and to be exposed to state-of-the-art research in the areas of their interest. This curricular component is offered as a portfolio of modules, from which students can make free selections during their 5th and 6th semester. The default specialization module size is 5 CP, with smaller 2.5 CP modules being possible as justified exceptions.

To pursue Global Economics and Management as a major, at least 15 CP from the following mandatory elective Specialization Modules need to be taken:

- Specialization: Advanced Econometrics (5CP)
- Specialization: Managing Public and Nonprofit Organizations (5CP)
- Specialization: Information Economics (5CP)
- Specialization: Lean Management (5CP)
- Specialization: Managerial Accounting (5CP)
- Specialization: Contemporary Topics in Marketing (5CP)

### 2.2.3.3 Study Abroad

Students have the opportunity to study abroad for a semester to extend their knowledge and abilities, broaden their horizons and reflect on their values and behavior in a different context as well as on their role in a global society. For a semester abroad (usually the 5th semester), modules related to the major with a workload equivalent to 22.5 CP must be completed. Modules recognized as study abroad CP need to be pre-approved according to Jacobs University study abroad procedures. Several exchange programs allow students to directly enroll at prestigious partner institutions worldwide. Jacobs University's participation in Erasmus+, the European Union's exchange program, provides an exchange semester at a number of European universities that include Erasmus study abroad funding.

For further information, please contact the International Office (<https://www.jacobs-university.de/study/international-office>).

GEM students that wish to pursue a study abroad in their 5th semester are required to select their modules at the study abroad partners such that they can be used to substitute between 10-15 CP of major-specific Specialization modules and between 5-15 CP of modules equivalent to the non-disciplinary Big Questions modules or the Community Impact Project (see Jacobs Track). In their 6th semester, according to the study plan, returning study-abroad students complete the Bachelor Thesis/Seminar module (see next section), they take any missing Specialization modules to reach the required 15 CP in this area, and they take any missing Big Questions modules to reach 15 CP in this area. Study abroad students are allowed to substitute the 5 CP Community Impact Project (see Jacobs Track below) with 5 CP of Big Questions modules.

### 2.2.3.4 Bachelor Thesis/Seminar Module

This module is a mandatory graduation requirement for all undergraduate students. It consists of two module components in the major study program guided by a Jacobs faculty member: the Bachelor Thesis (12 CP) and a Seminar (3 CP). The title of the thesis will appear on the students' transcripts.

Within this module, students apply the knowledge skills, and methods they have acquired in their major discipline to become acquainted with actual research topics, ranging from the identification of suitable (short-term) research projects, preparatory literature searches, the realization of discipline-specific research, and the documentation, discussion, and interpretation of the results.

With their Bachelor Thesis students demonstrate mastery of the contents and methods of their major-specific research field. Furthermore, students show the ability to analyze and solve a well-defined problem with scientific approaches, a critical reflection of the status quo in scientific literature, and the original development of their own ideas. With the permission of a Jacobs Faculty Supervisor, the Bachelor Thesis can also have an interdisciplinary nature. In the seminar, students present and discuss their theses in a course environment and reflect on their theoretical or experimental approach and conduct. They learn to present their chosen research topics concisely and comprehensively in front of an audience and to explain their methods, solutions, and results to both specialists and non-specialists.

## 2.3 The Jacobs Track

The Jacobs Track, an integral part of all undergraduate study programs, is another important feature of Jacobs University's educational model. The Jacobs Track runs parallel to the disciplinary CHOICE, CORE, and CAREER modules across all study years and is an integral part of all undergraduate study programs. It reflects a university-wide commitment to an in-depth training in scientific methods, fosters an interdisciplinary approach, raises awareness of global challenges and societal responsibility, enhances employability, and equips students with augmented skills desirable in the general field of study. Additionally, it integrates (German) language and culture modules.

### 2.3.1 Methods and Skills Modules

Methods and skills such as mathematics, statistics, programming, data handling, presentation skills, academic writing, and scientific and experimental skills are offered to all students as part of the Methods and Skills area in their curriculum. The modules that are specifically assigned to each study program equip students with transferable academic skills. They convey and practice specific methods that are indispensable for each student's chosen study program. Students are required to take 20 CP in the Methods and Skills area. The size of all Methods and Skills modules is 5 CP.

To pursue GEM as a major, the following Methods and Skills modules (20 CP) need to be taken as mandatory modules:

- Methods Module: Applied Calculus (5 CP)
- Methods Module: Applied Statistics with R (5 CP)
- Methods Module: Qualitative Research Methods (5 CP)
- Methods Module: Econometrics (5 CP)

### 2.3.2 Big Questions Modules

The modules in the Big Questions area (10 CP) intend to broaden students' horizons with applied problem solving between and beyond their chosen disciplines. The offerings in this area comprise problem-solving oriented modules that tackle global challenges from the perspectives of different disciplinary backgrounds that allow, in particular, a reflection of acquired disciplinary knowledge in economic, societal, technological, and/or ecological contexts. Working together with students from different disciplines and cultural backgrounds, these modules cross the boundaries of traditional academic disciplines.

Students are required to take 10 CP from modules in the Area. This curricular component is offered as a portfolio of modules, from which students can make free selections during their 5th and 6th semester with the aim of being exposed to the full spectrum of economic, societal, technological, and/or ecological contexts. The size of Big Questions Modules is either 2.5 or 5 CP.

### 2.3.3 Community Impact Project

In their 5th semester students are required to take a 5 CP Community Impact Project (CIP) module. Students engage in on-campus or off-campus activities that challenge their social responsibility, i.e., they typically work on major-related projects that make a difference in the community life on campus, in the campus neighborhood, Bremen, or on a cross-regional level. The project is supervised by a faculty coordinator and mentors.

Study abroad students are allowed to substitute the 5-CP Community Impact Project with 5 CP of Big Questions modules.

### 2.3.4 Language Modules

Communication skills and foreign language abilities foster students' intercultural awareness and enhance their employability in an increasingly globalized and interconnected world. Jacobs University supports its students in acquiring and improving these skills by offering a variety of language modules at all proficiency levels. Emphasis is put on fostering the German language skills of international students as they are an important prerequisite for non-native students to learn about, explore, and eventually integrate into their host country and its professional environment. Students who meet the required German proficiency level (e.g., native speakers) are required to select modules in any other modern foreign language offered (Chinese, French or Spanish). Hence, acquiring 10 CP in language modules, with German mandatory for non-native speakers, is a requirement for all students. This curricular component is offered as a four-semester sequence of foreign language modules. The size of the Language Modules is 2.5 CP.

## 3 Global Economics and Management as a Minor

A minor in GEM will meet the expectations of prospective students with a strong interest in the impact of globalization on economic dynamics, organizations and society. Economics studies how individuals, households, firms and governments make decisions regarding the production, distribution, acquisition and allocation of scarce resources. Management examine the design and administration of firms, nonprofits and public organizations, as well as the consequences of managerial actions and decisions on individuals, society and economies.

### 3.1 Qualification Aims

The purpose of a minor in GEM is to enable graduates to take an active role in shaping future economic and social processes. The GEM program therefore combines the disciplines of Economics and Management Studies. Students get to understand how economies and economic agents operate and coordinate their interactions, both economically and managerially. Students taking a minor in GEM discover important mechanisms that stand between globalized economic dynamics, business interests, and managerial action to prepare them for future responsibilities in an increasingly interconnected world.

#### 3.1.1 Intended Learning Outcomes

With a minor in GEM, students will be able to:

- discuss economic, political and societal problems using fundamentals of economics and management theories and scientific reasoning;
- apply economic theories and analyses to issues of wide public and professional concern;
- apply business and management theories to basic dimensions of the conduct of business;
- articulate the relationships between business decisions, economic policies, and national and international public affairs;

- distinguish differences in national and regional perceptions of and approaches to economic reasoning;
- assess and interpret relevant information for policy analyses in selected topics of micro- and macroeconomics.

### 3.2 Module Requirements

A minor in GEM requires 30 CP. The default option to obtain a minor in GEM is marked in the Study and Examination Plan. It includes the first-year unit “General Economics” and the second-year unit “Economic Policy Challenges” with the following CHOICE and CORE modules:

- CHOICE Module: Microeconomics (7.5 CP)
- CHOICE Module: Macroeconomics (7.5 CP)
- CORE Module: Development Economics (7.5 CP)
- CORE Module: Environmental and Resource Economics (7.5 CP)

Scheduling and prerequisites allowing, substitutions of the default CORE modules with the following CORE modules is possible:

- CORE Module: Comparing Economic Systems (7.5 CP)
- CORE Module: International Economics (7.5 CP)

### 3.3 Degree

After successful completion the minor in Global Economics and Management will be listed on the final transcript under PROGRAM OF STUDY and BA/BSc – [name of the major] as “(Minor: Global Economics and Management)”.

## 4 Global Economics and Management Undergraduate Program Regulations

### 4.1 Scope of these Regulations

The regulations in this handbook are valid for all students who entered the Global Economics and Management undergraduate program at Jacobs University in Fall 2019. In case of a conflict between the regulations in this handbook and the general Policies for Bachelor Studies, the latter apply (see <http://www.jacobs-university.de/academic-policies>).

Jacobs University Bremen reserves the right to substitute modules by replacements and/or reduce the number of mandatory/mandatory-elective modules offered.

### 4.2 Degree

Upon successful completion of the study program, students are awarded a Bachelor of Arts (BA) degree in Global Economics and Management.

### **4.3 Graduation Requirements**

In order to graduate, students need to obtain 180 credit points. In addition, the following graduation requirements apply:

- Students need to complete all mandatory components of the program as indicated in Chapter 6 of this handbook..

## 5 Schematic Study Plan for GEM

Figure 2 shows schematically the sequence and types of modules required for the study program. A more detailed description, including the assessment types, is given in the Study and Examination Plans in the following section.

| BA Degree in Global Economics and Management (180 ECTS credits) |  |   |  |  |                               |
|---|--|---|--|--|-------------------------------|
| Year 3  | Bachelor Thesis/Seminar<br>(m, 15 CP)                      |   |  | Big Questions<br>(me, 5 CP)                            | Big Questions<br>(me, 2.5 CP) |
|   | Study Abroad Option (22.5 CP)                              |   |  | Community Impact Project<br>(m, 5 CP)                  | Big Questions<br>(me, 2.5 CP) |
|   | Specialization<br>(m, 3 x 5 CP)                            |   |  |  |                               |
| Year 2  | Internship/Startup (Summer) (m, 15 CP)                     |   |  |  |                               |
|   | CORE<br>Environment and Resource Economics<br>(me, 7.5 CP) | CORE<br>Comparing Economic Systems<br>(me, 7.5 CP)            | CORE<br>Marketing<br>(me, 7.5 CP)                      | Methods/Skills<br>Econometrics<br>(m, 5 CP)            | Language<br>(me, 2.5 CP)      |
|   | CORE<br>Development Economics<br>(me, 7.5 CP)              | CORE<br>International Economics<br>(me, 7.5 CP)               | CORE<br>Organisation and HR Management<br>(me, 7.5 CP) | Methods/Skills<br>Research Methods<br>(m, 5 CP)        | Language<br>(me, 2.5 CP)      |
|   | CHOICE<br>Microeconomics<br>(m, 7.5 CP)                    | CHOICE<br>Introduction to Finance & Accounting<br>(m, 7.5 CP) | CHOICE<br>Own Selection<br>(me, 7.5 CP)                | Methods/Skills<br>Appl. Statistics with R<br>(m, 5 CP) | Language<br>(me, 2.5 CP)      |
|   | CHOICE<br>Macroeconomics<br>(m, 7.5 CP)                    | CHOICE<br>Intro to Internat. Business<br>(m, 7.5 CP)          | CHOICE<br>Own Selection<br>(me, 7.5 CP)                | Methods/Skills<br>Applied Calculus<br>(m, 5 CP)        | Language<br>(me, 2.5 CP)      |
| Area  | CHOICE/CORE 90 CP  |   |  | JACOBS TRACK 45 CP                                     |                               |

\* mandatory for minor students (default minor)

m = mandatory

me = mandatory elective

Figure 2: Schematic Study Plan for GEM

## 6 Study and Examination Plan

| Global Economics and Management   |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
|---|---|------------|------------------------|-------------------|-----|---|---|---------|---------------------|-------------------|----|--|
| Matriculation Fall 2019   |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
| Program-Specific Modules  |   |            |                        |                   |     | Jacobs Track Modules (General Education)  |   |         |                     |                   |    |  |
| Type  | Assessment  | Period     | Status <sup>1</sup>    | Sem.              | CP  | Type  | Assessment                              | Period  | Status <sup>1</sup> | Sem.              | CP |  |
| <b>Year 1 - CHOICE</b>  |   |            |                        |                   |     | <b>Year 1 - CHOICE</b>  |   |         |                     |                   |    |  |
| Take the mandatory CHOICE module listed below, this is a requirement for the Global Economics and Management program. |   |            |                        |                   |     | Take the mandatory CHOICE module listed below, this is a requirement for the Global Economics and Management program. |   |         |                     |                   |    |  |
| <b>Unit: General Economics (Default minor)</b>  |   |            |                        |                   |     | <b>Unit: Methods / Skills</b>   |   |         |                     |                   |    |  |
| <b>CH-310 Module: Microeconomics</b>  |   |            |                        |                   |     | <b>JTMS-MAT-08 Module: Applied Calculus</b>   |   |         |                     |                   |    |  |
| CH-310-A  | Microeconomics Theory and Policy                    | Lecture    | Written examination    | Final exam period |     | JTMS-08   | Applied Calculus                        | Lecture | Written examination | Final exam period |    |  |
| CH-310-B  | Microeconomics Tutorial                             | Tutorial   |                        |                   | 5   |   |   |         |                     |                   | 5  |  |
| <b>CH-311 Module: Macroeconomics</b>  |   |            |                        |                   |     | <b>JTMS-MET-03 Module: Applied Statistics with R</b>  |   |         |                     |                   |    |  |
| CH-311-A  | Macroeconomics Theory and Policy                    | Lecture    | Written examination    | Final exam period |     | JTMS-03   | Applied Statistics with R               | Lecture | Written examination | Final exam period |    |  |
| CH-311-B  | Macroeconomics Tutorial                             | Tutorial   |                        |                   | 5   |   |   |         |                     |                   | 5  |  |
| <b>Unit: General Management</b>   |   |            |                        |                   |     | <b>Unit: Language</b>   |   |         |                     |                   |    |  |
| <b>CH-300 Module: Introduction to International Business</b>  |   |            |                        |                   |     | German is the default language. Native German speakers take modules in another offered language.                      |   |         |                     |                   |    |  |
| CH-300-A  | Introduction to International Business Lecture      | Lecture    | Written examination    | Final exam period |     | JTMS-xxx  | <b>Module: Language 1</b>               |         |                     |                   |    |  |
| CH-300-B  | Introduction to International Business Seminar      | Seminar    | and Case Studies       |                   | 5   | JTMS-xxx  | Language 1                              | Seminar | Various             |                   | me |  |
| <b>CH-301 Module: Introduction to Finance and Accounting</b>  |   |            |                        |                   |     | <b>JTMS-xxx Module: Language 2</b>  |   |         |                     |                   |    |  |
| CH-301-A  | Introduction to Finance                             | Lecture    |                        |                   | 2.5 | JTMS-xxx  | Language 2                              | Seminar | Various             |                   | me |  |
| CH-301-B  | Introduction to Accounting                          | Lecture    | Written examination    | Final exam period |     |   |   |         |                     |                   |    |  |
| CH-301-C  | Finance and Accounting Tutorial                     | Tutorial   |                        |                   | 2.5 |   |   |         |                     |                   |    |  |
| <b>Unit: CHOICE (own selection)</b>   |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
| Take two further CHOICE modules from those offered for all other study programs. <sup>2</sup>                         |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
| <b>Year 2 - CORE</b>  |   |            |                        |                   |     | <b>Year 2 - CORE</b>  |   |         |                     |                   |    |  |
| Take all CORE modules listed below or replace 15 CP with suitable CORE modules from other study programs <sup>2</sup> |   |            |                        |                   |     | Take all CORE modules listed below or replace 15 CP with suitable CORE modules from other study programs <sup>2</sup> |   |         |                     |                   |    |  |
| <b>Unit: Economic Policy Challenges (Default minor)</b>   |   |            |                        |                   |     | <b>Unit: Methods / Skills</b>   |   |         |                     |                   |    |  |
| <b>CO-620 Module: Development Economics</b>   |   |            |                        |                   |     | <b>JTMS-MET-04 Module: Qualitative Research Methods</b>   |   |         |                     |                   |    |  |
| CO-620-A  | Development Economics                               | Seminar    | Term paper             |                   | 5   | JTMS-04   | Qualitative Research Methods            | Lecture | Project             |                   |    |  |
| CO-620-B  | Development Economics Tutorial                      | Tutorial   |                        |                   | 2.5 |   |   |         |                     |                   |    |  |
| <b>CO-621 Module: Environmental and Resource Economics</b>  |   |            |                        |                   |     | <b>JTMS-MET-05 Module: Econometrics</b>   |   |         |                     |                   |    |  |
| CO-621-A  | Environmental and Resource Economics                | Seminar    | Written examination    | Final exam period |     | JTMS-05   | Econometrics                            | Seminar | Written examination | Final exam period |    |  |
| CO-621-B  | Environmental and Resource Economics Tutorial       | Tutorial   |                        |                   | 2.5 |   |   |         |                     |                   |    |  |
| <b>Unit: Economic Institutions</b>  |   |            |                        |                   |     | <b>Unit: Language</b>   |   |         |                     |                   |    |  |
| <b>CO-622 Module: Comparing Economic Systems</b>  |   |            |                        |                   |     | German is the default language. Native German speakers take modules in another offered language.                      |   |         |                     |                   |    |  |
| CO-622-A  | Comparing Economic Systems                          | Seminar    | Term paper             |                   | 5   | JTMS-xxx  | <b>Module: Language 3</b>               |         |                     |                   |    |  |
| CO-622-B  | Comparing Economic Systems Tutorial                 | Tutorial   |                        |                   | 2.5 | JTMS-xxx  | Language 3                              | Seminar | Various             |                   | me |  |
| <b>CO-623 Module: International Economics</b>   |   |            |                        |                   |     | <b>JTMS-xxx Module: Language 4</b>  |   |         |                     |                   |    |  |
| CO-623-A  | International Economics                             | Seminar    | Written examination    | Final exam period |     | JTMS-xxx  | Language 4                              | Seminar | Various             |                   | me |  |
| CO-623-B  | International Economics Tutorial                    | Tutorial   |                        |                   | 2.5 |   |   |         |                     |                   |    |  |
| <b>Unit: Managing Diversity</b>   |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
| <b>CO-604 Module: Marketing</b>   |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
| CO-604-A  | Marketing   | Lecture    | Term paper             |                   | 5   |   |   |         |                     |                   |    |  |
| CO-604-B  | Marketing seminar                                   | Seminar    |                        |                   | 2.5 |   |   |         |                     |                   |    |  |
| <b>CO-605 Module: Organization and Human Resource Management</b>  |   |            |                        |                   |     |   |   |         |                     |                   |    |  |
| CO-605-A  | Organization and Human Resource Management          | Seminar    | Presentation           |                   | 5   |   |   |         |                     |                   |    |  |
| CO-605-B  | Organization and Human Resource Management Tutorial | Tutorial   |                        |                   | 2.5 |   |   |         |                     |                   |    |  |
| <b>Year 3 - CAREER</b>  |   |            |                        |                   |     | <b>Year 3 - CAREER</b>  |   |         |                     |                   |    |  |
| <b>CA-INT-900 Module: Internship / Startup and Career Skills</b>  |   |            |                        |                   |     | <b>Unit: Big Questions</b>  |   |         |                     |                   |    |  |
| CA-INT-900-0  | Internship / Startup and Career Skills              | Internship | Report or Businessplan |                   | 15  | JTBO-xxx  | <b>Module: Big Questions</b>            |         |                     |                   |    |  |
| <b>CA-GEM-800 Module: Thesis / Seminar GEM</b>  |   |            |                        |                   |     | Take a total of 10 CP of Big Questions modules with each 2.5 or 5 CP  |   |         |                     |                   |    |  |
| CA-GEM-800-T  | Thesis GEM  | Thesis     | Thesis                 |                   | 12  |   | <b>Unit: Community Impact Project</b>   |         |                     |                   |    |  |
| CA-GEM-800-S  | Seminar GEM   | Seminar    | Presentation           |                   | 3   | JTICI-950   | <b>Module: Community Impact Project</b> |         |                     |                   |    |  |
| <b>Unit: Specialization GEM</b>   |   |            |                        |                   |     | JTICI-950 Community Impact Project  |   |         |                     |                   |    |  |
| Take a total of 15 CP of specialization modules   |   |            |                        |                   |     | Project Project   |   |         |                     |                   |    |  |
| CA-S-GEM-801  | Advanced Econometrics                               | Seminar    | Term paper             |                   | me  | 5   |   |         |                     |                   |    |  |
| CA-S-GEM-802  | Managing Public and Nonprofit Organizations         | Seminar    | Presentation           |                   | me  | 5   |   |         |                     |                   |    |  |
| CA-S-GEM-803  | Information Economics                               | Seminar    | Term paper             |                   | me  | 5   |   |         |                     |                   |    |  |
| CA-S-IBA-xxx  | Specialization elective (from IBA) <sup>2</sup>     | Various    | Various                |                   | me  | 5   |   |         |                     |                   |    |  |
| <b>Total CP</b>   |   |            |                        |                   |     | <b>Total CP</b>   |   |         |                     |                   |    |  |
|   |   |            |                        |                   |     | 180   |   |         |                     |                   |    |  |

<sup>1</sup> Status (m = mandatory, me = mandatory elective)

<sup>2</sup> For a full listing of all CHOICE / CORE / CAREER / Jacobs Track units / modules please consult the study program handbooks and/or the CampusNet online catalogue.

Figure 3: Study and Examination Plan

## 7 Module Descriptions

### 7.1 Microeconomics

|  |   |  |                           |   |
|--|---|--|---------------------------|---|
| <b>Module Name</b>   |   | <b>Module Code</b>   | <b>Level (type)</b>       | <b>CP</b>   |
| Microeconomics   |   | CH-310   | Year 1 (CHOICE)           | 7.5   |
| <b>Module Components</b>   |   |  |                           |   |
| <i>Number</i>  | <i>Name</i>   |  | <i>Type</i>               | <i>CP</i>   |
| CH-310-A   | Microeconomics Theory and Policy  |  | Lecture                   | 5   |
| CH-310-B   | Microeconomics - Tutorial   |  | Tutorial                  | 2.5   |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |  | <b>Mandatory Status</b>   |   |
| Prof. Dr. Colin Vance  | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |  | Mandatory for GEM and IBA |   |
| <b>Entry Requirements</b>  |   |  | <b>Frequency</b>          | <b>Forms of Learning and Teaching</b>   |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i>   | annually                  | <ul style="list-style-type: none"> <li>Lecture (35 hours)</li> <li>Seminar (17.5 hours)</li> <li>Private Study (135 hours)</li> </ul> |
| <input checked="" type="checkbox"/> None   | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Logical reasoning</li> <li>High school mathematics</li> </ul> | <b>Duration</b>           | <b>Workload</b>   |
|  |   |  | 1 semester                | 187.5 hours   |
| <b>Recommendations for Preparation</b>   |   |  |                           |   |
| To prepare for this module, students are recommended to read the article "Research on teaching economics to undergraduates," published in the Journal of Economic Literature in 2015. The article will allow students to get a first-hand look at the challenges of teaching economics from the viewpoint of those who teach it.   |   |  |                           |   |
| <b>Content and Educational Aims</b>  |   |  |                           |   |
| <p>The study of economics is concerned with the allocation of scarce resources and the associated implications for efficiency, equity, and human welfare. This module introduces the field of microeconomics, focusing specifically on the role of markets in facilitating exchange between different sectors of the economy such as workers, consumers, firms, and government institutions. Topics addressed include consumer theory, the cost structures and behavior of firms in various industries, competition, monopoly, and government regulation. The module applies theoretical concepts to contemporary policy questions, such as when government intervention is justified to correct market imperfections.</p> <p>This course aims at transmitting fundamental knowledge of economics at the level of economic agents. A command of microeconomics constitutes the basis for undergraduate studies in the fields of economics and management and helps make sense of economic behaviors in many situations, including professional settings. With its focus on questions of welfare and the policy implications of microeconomic theories, this course also enables students to understand public affairs from an economic perspective at micro level and promotes their capacity to differentiate and explain the concepts taught in class. Textbook-based lectures ensure the transmission of the necessary knowledge. The accompanying, interactive tutorials further promote the students' capacity to describe and give examples of the concepts taught in class.</p> |   |  |                           |   |

### ***Intended Learning Outcomes***

By the end of this module, students should be able to

- explain how economic concepts such as opportunity costs and the gains from trade can be applied to a range of themes of relevance to human welfare;
- use graphical depictions to derive insights into how markets function;
- distinguish between equity and efficiency when evaluating the outcomes of economic policies;
- explain and differentiate fundamental microeconomic models, such as that demonstrating the gains from trade, using graphs as visual aids;
- explain the policy implications of microeconomic theories.

### ***Usability and Relationship to other Modules***

- Mandatory for a major in GEM or IBA
- Mandatory for a minor in GEM
- Prerequisite for all 2nd year GEM Core modules
- Pre-requisite for 2<sup>nd</sup> year GEM/IBA modules: Marketing, Organization and Human Resource Management
- Elective for all other undergraduate study programs.
- This module transmits fundamental knowledge of microeconomics that is necessary to the second-year modules "Development Economics", "Environmental and Resource Economics", "Comparing Economic Systems" and "International Economics". This module further benefits from the contents taught in its accompanying module "Macroeconomics" as the combination of the two offers a comprehensive view of economic questions from the interaction of economic agents to the aggregated level.

### ***Assessment***

**In all module descriptions the category "Assessment" describes the requirements for the award of ECTS credit points (CP) for the respective module.**

Type: Written examination

Duration: 120 minutes

Scope: All intended learning outcomes of the module

Weight: 100%

The module gives the possibility to do a presentation in front of the class during the module. This additional presentation is a voluntary task that can improve the grade by 0.33 points (German grading system) but is not required to reach the best grade in the module (1.0).

## 7.2 Macroeconomics

|   |   |                    |  |           |
|---|---|--------------------|--|-----------|
| <b>Module Name</b>  |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Macroeconomics  |   | CH-311             | Year 1 (CHOICE)  | 7.5       |
| <b>Module Components</b>  |   |                    |  |           |
| <i>Number</i>   | <i>Name</i>   | <i>Type</i>        |  | <i>CP</i> |
| CH-311-A  | Macroeconomics Theory and Policy  | Lecture            |  | 5         |
| CH-311-B  | Macroeconomics - Tutorial   | Tutorial           |  | 2.5       |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |           |
| Prof. Dr. Colin Vance   | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |                    | Mandatory for GEM and IBA  |           |
| <b>Entry Requirements</b>   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i>   | <i>Co-requisites</i>  | annually           | <ul style="list-style-type: none"> <li>Lecture (35 hours)</li> <li>Tutorial (17.5 hours)</li> <li>Private Study (135 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> Microeconomics  | <input checked="" type="checkbox"/> None  |                    |  |           |
| <i>Knowledge, Abilities, or Skills</i>  |   | <b>Duration</b>    | <b>Workload</b>  |           |
| <ul style="list-style-type: none"> <li>Logical reasoning</li> <li>High school mathematics</li> </ul>  |   | 1 semester         | 187.5 hours  |           |
| <b>Recommendations for Preparation</b>  |   |                    |  |           |
| None.   |   |                    |  |           |
| <b>Content and Educational Aims</b>   |   |                    |  |           |
| <p>The study of economics is concerned with the allocation of scarce resources and the associated implications for efficiency, equity, and human welfare. This module introduces the field of macroeconomics, focusing specifically on different aspects of demand and supply-side policies. The module applies theoretical concepts to contemporary policy questions, such as when and why governments may want to intervene in the economy with the help of fiscal and monetary policies and what these government interventions mean for various markets and economic actors. The lectures cover the material students need to know to take and pass the module examination. In the tutorials, the students further recess the material taught in the lectures via discussions of related concepts, policy problems, or scientific studies, and exercises.</p> <p>This module aims at transmitting fundamental knowledge of economics at the aggregated level of whole economies. A command of macroeconomics constitutes the basis for undergraduate studies in the fields of economics and management and helps making sense of the economic conditions in which we behave, not least in professional settings. With its interest in questions of market regulation and policy implications of macroeconomics theories, this module also enables students to understand public affairs from the perspective of whole economies. Textbook-based lectures ensure the transmission of the necessary knowledge. The accompanying, interactive tutorials further promote the students' capacity to differentiating and explaining the concepts taught in class.</p> |   |                    |  |           |

**Intended Learning Outcomes**

By the end of this module, students should be able to

- express and discuss ways to analyze the performance of national economies through key indicators such as GDP growth, unemployment, inflation, government deficit and trade imbalances
- explain and differentiate the goals and effectiveness of government interventions to combat economic crises in the form of monetary and fiscal policies;
- describe how supply side measures such as improvements in infrastructure, education, and research can improve long-term growth and the international competitiveness of companies;
- demonstrate how economic development and economic policy decisions have a strong potential of producing winners and losers among economic actor;
- explain the policy implications of macroeconomic theories.

**Usability and Relationship to other Modules**

- Mandatory for a major in GEM and IBA
- Mandatory for a minor in GEM
- Prerequisite for all 2<sup>nd</sup> year GEM CORE modules
- Pre-requisite for 2<sup>nd</sup> year GEM/IBA modules: Marketing, and Organization and Human Resource Management
- Elective for all other undergraduate study programs.
- This module transmits fundamental knowledge of macroeconomics that is necessary to the second-year modules "Development Economics", "Environmental and Resource Economics", "Comparing Economic Systems" and "International Economics". This module further benefits from the contents taught in its accompanying module "Microeconomics" as the combination of the two offers a comprehensive view of economic questions from the interaction of economic agents to the aggregated level.

**Assessment**

Type: Written examination

Duration: 120 minutes

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.3 Introduction to International Business

|  |   |   |  |                  |
|--|---|---|--|------------------|
| <b>Module Name</b><br>Introduction to International Business   |   | <b>Module Code</b><br>CH-300                              | <b>Level (type)</b><br>Year 1 (CHOICE)   | <b>CP</b><br>7.5 |
| <b>Module Components</b>   |   |   |  |                  |
| <i>Number</i>  | <i>Name</i>   | <i>Type</i>   | <i>CP</i>  |                  |
| CH-300-A   | Introduction to International Business - Lecture  | Lecture   | 5  |                  |
| CH-300-B   | Introduction to International Business - Seminar  | Seminar   | 2.5  |                  |
| <b>Module Coordinator</b><br>Prof. Dr. Christoph Lattemann   | <b>Program Affiliation</b><br><ul style="list-style-type: none"> <li>International Business Administration (IBA)</li> </ul> | <b>Mandatory Status</b><br>Mandatory for IBA, GEM and IEM |  |                  |
| <b>Entry Requirements</b>  |   | <b>Frequency</b><br>annually                              | <b>Forms of Learning and Teaching</b>  |                  |
| <i>Pre-requisites</i><br><input checked="" type="checkbox"/> None  | <i>Co-requisites</i><br><input checked="" type="checkbox"/> None  | <i>Knowledge, Abilities, or Skills</i>                    | <ul style="list-style-type: none"> <li>Lecture (35 hours)</li> <li>Seminar (17.5 hours)</li> <li>Private studies on cases (50 hours)</li> <li>Private studies on content (85 hours)</li> </ul> |                  |
|  |   | <b>Duration</b><br>1 semester                             | <b>Workload</b><br>187.5 hours   |                  |
| <b>Recommendations for Preparation</b><br>None   |   |   |  |                  |
| <b>Content and Educational Aims</b><br><p>This module provides the basics to make informed and effective business decisions in today's global economy. It focuses on the domains of business such as international strategy and organizational structure, selecting and managing entry modes, developing and marketing products internationally as well as managing international operations. Aspects on globalization, cross-cultural businesses, politics and law in business, economic systems and development, international trade, and international financial markets will also be covered. Upon completing the module, students will know how to use a number of international business analytical tools, are experienced with case study analysis: including, PEST, CAGE, International Market Selection and Modes of Entry to mention a few key ones. Global corporate social responsibility and sustainability issues will also be discussed.</p>  |   |   |  |                  |
| <b>Intended Learning Outcomes</b><br><p>By the end of this module, students should be able to</p> <ul style="list-style-type: none"> <li>understand and describe the process of globalization and how it affects markets and production e.g. identify the two forces causing globalization to increase, identify the types of companies that participate in international business, describe the global business environment and identify its four main elements.</li> <li>describe culture and explain the significance of both national culture and subcultures, identify the components of culture and the impact on business, describe the two main frameworks used to classify cultures and explain their practical use.</li> <li>describe each main type of political system. Identify the origins of political risk and how managers can reduce its effects. List the main types of legal systems and explain how they differ. Describe the major legal and ethical issues facing international companies.</li> </ul> |   |   |  |                  |

- describe what is meant by a centrally planned economy and explain why its use is declining. Identify the main characteristics of a mixed economy and explain the emphasis on privatization. Describe the different ways to measure a nation's level of development.
- discuss international trade and trade patterns. Explain absolute advantage and comparative advantage and identify their differences. Explain the factor proportions and international product life cycle theories as well as trade and national competitive advantage theories.
- describe the political, economic, and cultural motives behind governmental intervention in trade. List and explain the methods governments use to promote and restrict international trade.
- define regional economic integration and identify its five levels. Discuss the benefits and drawbacks associated with regional economic integration.
- discuss international capital market, international bond, international equity, and Eurocurrency markets. Discuss the four primary functions of the foreign exchange market. Explain how currencies are quoted and the different rates given.
- explain how exchange rates influence the activities of domestic and international companies. Identify the factors that help determine exchange rates and their impact on business.
- identify international strategies and the corporate-level strategies that companies use.
- discuss the important issues that influence the choice of organizational structure.
- explain why and how companies use exporting, importing, and countertrade. Explain the various means of financing export and import activities. Describe the different contractual entry modes that are available to companies. Discuss the important strategic factors in selecting an entry mode.
- explain the impact globalization is having on international marketing activities. Understand the various dimensions for developing international product, promotional, pricing and distribution strategies (4P's marketing mix).
- Finally, student will be able to use concepts, tools and frameworks and apply them in the international business context. Develop and improve your analytical and critical thinking skills by applying them to contemporary international business issues. Improve your communication skills like reading, writing, speaking, and listening. You will prepare and deliver oral presentations as well as written works either prepared individually or as a team. You will improve your research skills by analyzing real business situations, identifying problems, evaluating and discussing options and prepare recommendations. These recommendations need to be fact-based, undertaken qualitative and quantitative analyses.

***Usability and Relationship to other Modules***

- Mandatory for a major in IBA, GEM and IEM
- Mandatory for a minor in IBA
- Pre-requisite for all 2nd year IBA CORE modules
- Elective for all other undergraduate study programs.

***Assessment***

Type: Written examination and Case Studies (preparation of case studies is prerequisite to attend the written examination).

Duration of written examination: 120 min

Weight: 100%

Scope: all intended learning outcomes

## 7.4 Introduction to Finance and Accounting

|  |   |  |   |                  |
|--|---|--|---|------------------|
| <b>Module Name</b><br>Introduction to Finance and Accounting   |   | <b>Module Code</b><br>CH-301           | <b>Level (type)</b><br>Year 1 (CHOICE)  | <b>CP</b><br>7.5 |
| <b>Module Components</b>   |   |  |   |                  |
| <b>Number</b>  | <b>Name</b>   | <b>Type</b>                            | <b>CP</b>   |                  |
| CH-301-A   | Introduction to Finance   | Seminar                                | 2.5   |                  |
| Ch-301-B   | Introduction to Accounting  | Seminar                                | 2.5   |                  |
| Ch-301-C   | Finance and Accounting Tutorial   | Tutorial                               | 2.5   |                  |
| <b>Module Coordinator</b><br>Prof. Dr. Tilo Halaszovich  | <b>Program Affiliation</b><br><ul style="list-style-type: none"> <li>International Business Administration (IBA)</li> </ul> |  | <b>Mandatory Status</b><br>Mandatory for IBA, GEM and IEM   |                  |
| <b>Entry Requirements</b>  |   | <b>Frequency</b><br>annually           | <b>Forms of Learning and Teaching</b>   |                  |
| <b>Pre-requisites</b><br><input checked="" type="checkbox"/> None  | <b>Co-requisites</b><br><input checked="" type="checkbox"/> none  | <b>Knowledge, Abilities, or Skills</b> | <ul style="list-style-type: none"> <li>Seminars (35 hours)</li> <li>Tutorial (17.5 hours)</li> <li>Private Study (135 hours)</li> </ul> |                  |
|  |   | <b>Duration</b><br>1 semester          | <b>Workload</b><br>187.5 hours  |                  |
| <b>Recommendations for Preparation</b><br>None   |   |  |   |                  |
| <b>Content and Educational Aims</b>  |   |  |   |                  |
| <p>This module introduces students to basic financial and accounting techniques necessary to supplement business decision-making. The module is split into three sub-parts. The first part is focusing on finance and investment and will provide students with the basics of corporate finance and investments. It will offer an overview of the different sources of finance from private and public sources and it will introduce the analytical tools and the necessary techniques for the financial management of a firm. It further provides the foundation for the basic domains of entrepreneurial finance, financing small- and medium enterprises and accessing capital markets. This also includes structuring financial activities in projects, funds, mergers and acquisition.</p> <p>The second part is focusing on measuring the financial position and performance of a firm, on reporting cash flows and on analyzing financial statements. The perspective, thereby, lies on purposes of accounting, principal accounting procedures, sources and recording of data, the verification of accounting records, principles of financial statements, preparation, analysis and interpretation of financial statements, international accounting standards (IFRS), principles and policies and their differences.</p> <p>The third part of the module is designed as tutorial. In the tutorial students will repeat, apply and practice the techniques from both seminars. Students work on exercises individually and in small groups.</p> |   |  |   |                  |

**Intended Learning Outcomes**

Upon completion of this module, students will be able to:

- understand the theoretical foundation of corporate finance;
- understand how public and private financial markets and organizations work;
- differentiate the variety of financing sources for companies;
- develop a sound understanding how to structure investments;
- identify and explain the financial structure of firms;
- identify and describe the major functions of financial reporting;
- describe and explain the relationship between financial statement elements;
- describe the roles and desirable attributes of financial reporting standards;
- describe and explain the elements of the balance sheet;
- describe, explain and classify cash flow items;
- describe and explain tools and techniques used in financial analysis and calculate ratios;
- describe and explain characteristics of financial reporting quality.

**Usability and Relationship to other Modules**

- Mandatory for a major in IBA, GEM and IEM
- Mandatory for a minor in IBA
- Pre-requisite for all 2nd year IBA CORE modules
- Elective for all other undergraduate study programs.
- Builds on the module "Introduction to International Business"
- The module prepares students for the CORE modules in the second and third study year

**Assessment**

Type: Written examination

Duration: 120 minutes

Weight: 100%

Scope: All intended learning outcomes of the module.

## 7.5 Development Economics

|   |   |   |                    |  |           |
|---|---|---|--------------------|--|-----------|
| <b>Module Name</b>  |   |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Development Economics   |   |   | CO-620             | Year 2 (CORE)  | 7.5       |
| <b>Module Components</b>  |   |   |                    |  |           |
| <i>Number</i>   | <i>Name</i>   |   |                    | <i>Type</i>  | <i>CP</i> |
| CO-620-A  | Development Economics – Seminar   |   |                    | Seminar  | 5         |
| CO-620-B  | Development Economics - Tutorial  |   |                    | Tutorial   | 2.5       |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |   |                    | <b>Mandatory Status</b>  |           |
| Prof. Dr. Achim Schlüter  | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |   |                    | Mandatory elective for GEM   |           |
| <b>Entry Requirements</b>   |   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i>   | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i>  | annually           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Tutorial (17.5 hours)</li> <li>Private Study (135 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> Microeconomics and Macroeconomics   | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Logical and causality-based reasoning</li> <li>Basic knowledge in micro- and macroeconomics</li> </ul> | <b>Duration</b>    | <b>Workload</b>  |           |
|   |   |   | 1 semester         | 187.5 hours  |           |
| <b>Recommendations for Preparation</b>  |   |   |                    |  |           |
| The fundament of the course is the textbook of Todaro/Smith “Development Economics”. It is helpful to use it for prior preparation.   |   |   |                    |  |           |
| <b>Content and Educational Aims</b>   |   |   |                    |  |           |
| <p>This module combines knowledge from the first year modules with insights from the social sciences and economic history to provide students with an overview of some of the major ideas in development thinking, especially problems related to slow growth, high poverty rates, high income inequality, environment, and chronic external crises. The main focus of this module is on identifying, formulating and discussing economic policy strategies for accelerating growth, attaining sustainable development, reducing poverty and income inequality, and decreasing external imbalances. Textbook-based lectures and paper discussions ensure the transmission of the necessary knowledge during the seminar. In the accompanying, interactive tutorials, students have the opportunity to review the material taught in the seminar and further train their capacity to explain these concepts and theories.</p> <p>This module aims at transmitting fundamental knowledge of development and related issues from an economics perspective. Understanding the underlying mechanisms and economic dynamics of development constitutes an important basis for undergraduate studies in the fields of economics and helps making sense of economic behaviors in many situations, including professional settings. With its interest in questions of growth, poverty and inequality, this module helps students to appreciate cross-dependencies in a globalized world, where states, companies, civil society and individuals are interacting in a complex manner.</p> |   |   |                    |  |           |

**Intended Learning Outcomes**

By the end of this module, students should be able to

- identify and explain critical policy challenges in various country groups and the world and what they mean for various economic actors and governments;
- analyze economic interests of various stakeholders and how they collide;
- identify and explain best practices from other countries and their suitability for the country under consideration;
- identify and apply suitable theoretical and empirical methods of analysis for economic development processes within different societies;
- understand the crucial importance of Research and Development for many economic policy challenges;
- evaluate the costs and benefits of suggested policy measures;
- analyze the distributional effects of suggested policy measures and their implications for the feasibility of suggested measures.

**Usability and Relationship to other Modules**

- Mandatory elective for a major in GEM
- One of two default 2<sup>nd</sup> year Core modules for a minor in GEM (a minor in GEM is only feasible with the modules Development Economics and Environment and Resources (default), or with International Economics and Comparing Economic Systems)
- Elective for all other programs
- This module builds on the knowledge acquired in the first-year modules “Microeconomics” and “Macroeconomics” and expands students’ understandings of these two disciplines by focusing on the development process of low income economies as well as their relation to other economies in a globalized world. This module benefits from the contents taught in its accompanying module “Environmental and Resource Economics” as the combination of the two modules further puts issues of economic growth and inequality into the perspective of environmental sustainability, and vice versa. This module provides knowledge that is required for the third-year module “Managing Public and Nonprofit Organizations”.

**Assessment**

Type: Term paper

Length: 2500-4000 words

Weight: 100%

Scope: All intended learning outcomes of the module

The module gives the possibility to do a presentation in front of the class during the module. This additional presentation is a voluntary task that can improve the grade by 0.33 points (German grading system) but is not required to reach the best grade in the module (1.0).

## 7.6 Environmental and Resource Economics

|  |   |   |                    |                                       |  |
|--|---|---|--------------------|---------------------------------------|--|
| <b>Module Name</b>   |   |   | <b>Module Code</b> | <b>Level (type)</b>                   | <b>CP</b>  |
| Environmental and Resource Economics   |   |   | CO-621             | Year 2 (CORE)                         | 7.5  |
| <b>Module Components</b>   |   |   |                    |                                       |  |
| <i>Number</i>  | <i>Name</i>   |   |                    | <i>Type</i>                           | <i>CP</i>  |
| CO-621-A   | Environmental and Resource Economics - Seminar  |   |                    | Seminar                               | 5  |
| CO-621-B   | Environmental and Resource Economics - Tutorial   |   |                    | Tutorial                              | 2.5  |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |   |                    | <b>Mandatory Status</b>               |  |
| Prof. Dr. Colin Vance  | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |   |                    | Mandatory elective for GEM            |  |
| <b>Entry Requirements</b>  |   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b> |  |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i>  |                    | Annually                              | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Tutorial (17,5 hours)</li> <li>Private Study (135 hours)</li> </ul> |
| <input checked="" type="checkbox"/> Microeconomics and Macroeconomics  | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Logical and causality-based reasoning</li> <li>Basic knowledge in micro- and macroeconomics</li> </ul> |                    | <b>Duration</b>                       |  |
|  |   |   | 1 semester         | 187.5 hours                           |  |
| <b>Recommendations for Preparation</b>   |   |   |                    |                                       |  |
| To prepare for this module, students are recommended to read the article "How do economists really think about the environment?" published in Nature in 1998.  |   |   |                    |                                       |  |
| <b>Content and Educational Aims</b>  |   |   |                    |                                       |  |
| <p>This module covers the application of theoretical and empirical economics to the analysis of environmental and resource management issues. Specific topics include global climate change, energy use, transportation, and the extraction of exhaustible and non-exhaustible resources. Cross-cutting these topics is an emphasis on how economic analysis can contribute to contemporary policy debates, such as the strengths and weaknesses of regulatory- and market-based policy instruments for reducing CO2 emissions. We also examine the implications for industry of national and international efforts to protect the environment. In the tutorials, students have the opportunity to review the material taught in the seminar and further train their understanding of these concepts and theories in group discussions of concepts and case study problems.</p> <p>This module aims at transmitting fundamental knowledge of environmental dynamics from an economics perspective. Understanding the underlying mechanisms and economic dimensions of environmental issues constitutes an important basis for undergraduate studies in the fields of economics and the management of sustainability and helps making sense of economic behaviors in many situations, including professional settings. With its interest in questions of resource exhaustibility and in the impact of economic behavior on the environment, this module helps students to understand public affairs from an environmental perspective and promotes their capacity to anticipate the consequences of economic and managerial decisions, including their own.</p> |   |   |                    |                                       |  |

**Intended Learning Outcomes**

By the end of this module, students should be able to

- name and discuss key theoretical frameworks for understanding environmental economics;
- differentiate and discriminate empirical evidence on economy-environment linkages;
- apply theoretical and empirical knowledge to judge the merits of environmental policies, in particular, the pros and cons of market-based versus regulatory approaches;
- calculate the net present value of alternative measures to protect the environment.

**Usability and Relationship to other Modules**

- Mandatory elective for a major in GEM
- One of two default 2<sup>nd</sup> year Core modules for a minor in GEM (a minor in GEM is only feasible with the modules Development Economics and Environment and Resources (default), or with International Economics and Comparing Economic Systems)
- Elective for all other programs
- This module builds on the knowledge acquired in the first-year modules “Microeconomics” and “Macroeconomics” and expands students’ understandings of these two disciplines by focusing on the linkages between economy and environment both from an economic agent and from a policy perspective. This module benefits from the contents taught in its accompanying module “Development Economics” as the combination of the two modules further puts issues of environmental sustainability into the perspective of economic growth and inequality in international trade, and vice versa. This module provides knowledge that is required for the third-year modules “Managing Public and Nonprofit Organizations”, “Advanced Econometrics” and “Information Economics”.

**Assessment**

Type: Written examination

Duration: 120 minutes

Weight: 100%

Scope: All intended learning outcomes of the module

The module gives the possibility to do a presentation in front of the class during the module. This additional presentation is a voluntary task that can improve the grade by 0.33 points (German grading system) but is not required to reach the best grade in the module (1.0).

## 7.7 Comparing Economic Systems

|  |   |                    |  |           |
|--|---|--------------------|--|-----------|
| <b>Module Name</b>   |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Comparing Economic Systems   |   | CO-622             | Year 2 (CORE)  | 7.5       |
| <b>Module Components</b>   |   |                    |  |           |
| <b>Number</b>  | <b>Name</b>   | <b>Type</b>        |  | <b>CP</b> |
| CO-622-A   | Comparing Economic Systems - Seminar  | Seminar            |  | 5         |
| CO-622-B   | Comparing Economic Systems - Tutorial   | Tutorial           |  | 2.5       |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |           |
| Prof. Dr. Tobias ten Brink   | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |                    | Mandatory elective for GEM   |           |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>  | annually           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Tutorial (17,5 hours)</li> <li>Private Study (135 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> Microeconomics and Macroeconomics  | <input checked="" type="checkbox"/> None  |                    |  |           |
|  |   | 1 semester         | 187.5 hours  |           |
| <b>Recommendations for Preparation</b>   |   |                    |  |           |
| Students prepare best for this module by reading Clift, Ben (2014): Comparative Political Economy. States, Markets and Global Capitalism, Palgrave.  |   |                    |  |           |
| <b>Content and Educational Aims</b>  |   |                    |  |           |
| <p>In the last two decades Germany was coined the “Sick Man of Europe” as well as a “European Powerhouse”. These are only two examples of a lively debate about the different performances of national economies. After the demise of centrally planned economies the focus of such discussions was largely on “Varieties of Capitalism”, a comparative analysis of liberal and coordinated market economies in the OECD world. This module introduces key theories of comparative political economy and the many significant differences in the evolution of capitalist systems. The module helps students to understand the interplay between economic, political, and socio-cultural aspects in shaping governmental and non-governmental institutions of a modern economy. Case studies provide insights into a wide variety of economic actors and institutions across time and space. In the seminar, textbook readings and other academic readings ensure the transmission of the necessary knowledge students need in order to write a successful end-of-term paper. In the accompanying tutorial, students have the opportunity: (i) to review the material taught in the seminar, and (ii) to develop and discuss paper topics and outlines.</p> <p>This module aims at transmitting fundamental knowledge on economic systems from a comparative social science perspective. Understanding the underlying institutions of economic systems constitutes an important basis for undergraduate studies in the fields of economics and management. With its interest in the diversity of capitalisms and related institutions, this module helps students to appreciate public and economic affairs from the perspective of political</p> |   |                    |  |           |

economy and promotes their capacity to anticipating the consequences of economic and managerial decisions, including their own. This module further promotes the students' capacity to write a scientific paper.

***Intended Learning Outcomes***

By the end of this module, students should be able to

- explain and compare the key topics and themes in the field of comparative political economy;
- analyze the interplay of economic, political and socio-cultural institutions and actors and how these shape the development of modern economies;
- apply theoretical perspectives of comparative political economy to empirical cases, including to non-Western countries;
- construct well-supported arguments by designing an independent research paper.

***Usability and Relationship to other Modules***

- Mandatory elective for a major in GEM
- Mandatory elective module for a minor in GEM (a minor in GEM is only feasible with the modules Development Economics and Environment and Resources (default), or with International Economics and Comparing Economic Systems)
- Elective for all other programs
- This module builds on the knowledge acquired in the first-year modules "Microeconomics" and "Macroeconomics" and expands students' understandings of these two disciplines by focusing on classical and contemporary work underlying the assumptions of economic systems and their diversity in forms across the globe as well as their political dimension. This module benefits from the contents taught in its accompanying module "International Economics" as the combination of the two modules further puts the study of the tenets of capitalism into the perspective of international trade, and vice versa. This module provides knowledge that is required for the third-year module "Managing Public and Nonprofit Organizations".

***Assessment***

Type: Term Paper

Length: 2.500 - 4000 words

Weight: 100%

Scope: All intended learning outcomes of the module.

The course also gives the possibility to give a presentation in front of the class as a voluntary assignment. Presenting can improve the grade by 0.33 points (German grading system) but is not required to reach the best grade in the course (1.0).

## 7.8 International Economics

|   |   |   |                    |  |           |
|---|---|---|--------------------|--|-----------|
| <b>Module Name</b>  |   |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| International Economics   |   |   | CO-623             | Year 2 (CORE)  | 7.5       |
| <b>Module Components</b>  |   |   |                    |  |           |
| <b>Number</b>   | <b>Name</b>   |   |                    | <b>Type</b>  | <b>CP</b> |
| CO-623-A  | International Economics - Seminar   |   |                    | Seminar  | 5         |
| CO-623-B  | International Economics - Tutorial  |   |                    | Tutorial   | 2.5       |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |   |                    | <b>Mandatory Status</b>  |           |
| Prof. Dr. Olivier Berthod   | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |   |                    | Mandatory elective for GEM   |           |
| <b>Entry Requirements</b>   |   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <b>Pre-requisites</b>   | <b>Co-requisites</b>  | <b>Knowledge, Abilities, or Skills</b>  | annually           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Tutorial (17.5 hours)</li> <li>Private Study (135 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/>   | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Notions in mathematics</li> <li>Basic knowledge in micro and macroeconomics</li> </ul> | <b>Duration</b>    | <b>Workload</b>  |           |
| Microeconomics and Macroeconomics   |   |   | 1 semester         | 187.5 hours  |           |
| <b>Recommendations for Preparation</b>  |   |   |                    |  |           |
| Students should review their notes and material in micro- and macroeconomics. A few weeks prior to the course, students are encouraged to keep track of the most recent developments in international trade policy and finance in the news.   |   |   |                    |  |           |
| <b>Content and Educational Aims</b>   |   |   |                    |  |           |
| <p>This module examines main concepts and methods of international economics. Its objective is to introduce students to different aspects of the international economy, including the dynamics and dimensions of economic globalization and related institutions, international trade theory and trade policy, and international capital movements and related issues. In the seminar, textbook-based lectures ensure the transmission of the necessary knowledge. The accompanying, interactive tutorials offer students with the opportunity to review the material taught in the seminar and to train their capacity to differentiate and explain the concepts as a preparation for the final exam.</p> <p>This module aims at transmitting fundamental knowledge of international trade from an economics perspective. Understanding the underlying dynamics and policy implications of international trade constitutes an important basis for undergraduate studies in the fields of economics and management and helps making sense of economic behaviors in many situations, including professional settings. With its interest in the implications of international trade, this module helps students to appreciate public and economic affairs from the perspective of global interdependence and promotes their capacity to anticipating the consequences of economic and business decisions, including their own, depending on the regions they contemplate.</p> |   |   |                    |  |           |

***Intended Learning Outcomes***

By the end of this module, students should be able to

- labeling and describing the economic causes of trans-border economic activities;
- discuss the economic effects of trans-border activities on national economies and actors;
- apply knowledge from Microeconomics to international trade topics;
- apply knowledge from Macroeconomics to international macroeconomic policy issues;
- discuss the political aspects of international economic dynamics.

***Usability and Relationship to other Modules***

- Mandatory elective for a major in GEM
- Mandatory elective module for a minor in GEM (a minor in GEM is only feasible with the modules Development Economics and Environment and Resources (default), or with International Economics and Comparing Economic Systems)
- Elective for all other programs
- This module builds on the knowledge acquired in the first-year modules “Microeconomics” and “Macroeconomics” and expands students’ understandings of these two disciplines by focusing on dynamics of international trade and related institutions.
- This module benefits from the contents taught in its accompanying module “Comparing Political Systems” as the combination of the two modules further puts the study of international trade in the perspective of political economy, and vice versa. This module provides knowledge that is required for the third-year modules “Information Economics”, “Advanced Econometrics” and “Managing Public and Nonprofit Organizations”.

***Assessment***

Type: Written examination

Duration: 120 minutes

Weight: 100%

Scope: All intended learning outcomes of the module

## 7.9 Marketing

|  |  |  |                               |   |                  |
|--|--|--|-------------------------------|---|------------------|
| <b>Module Name</b><br>Marketing  |  |  | <b>Module Code</b><br>CO-604  | <b>Level (type)</b><br>Year 2 (CORE)  | <b>CP</b><br>7.5 |
| <b>Module Components</b>   |  |  |                               |   |                  |
| <i>Number</i>  | <i>Name</i>  |  |                               | <i>Type</i>   | <i>CP</i>        |
| CO-604-A   | Marketing - Lecture  |  |                               | Lecture   | 5                |
| CO-604-B   | Marketing - Seminar  |  |                               | Seminar   | 2.5              |
| <b>Module Coordinator</b><br><br>Prof. Dr. Tilo Halaszovich  | <b>Program Affiliation</b><br><br><ul style="list-style-type: none"> <li>International Business Administration</li> <li>Global Economics and Management</li> </ul> |  |                               | <b>Mandatory Status</b><br><br>Mandatory elective for IBA and GEM   |                  |
| <b>Entry Requirements</b>  |  |  | <b>Frequency</b>              | <b>Forms of Learning and Teaching</b>   |                  |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>   | <i>Knowledge, Abilities, or Skills</i>   | annually                      | <ul style="list-style-type: none"> <li>Lecture (35 hours)</li> <li>Seminar (17.5 hours)</li> <li>Private Studies (135 hours)</li> </ul> |                  |
| <input checked="" type="checkbox"/> Mandatory 1 <sup>st</sup> year IBA/GEM modules   | <input checked="" type="checkbox"/> Organization and Human Resource  | <ul style="list-style-type: none"> <li>Academic writing skills</li> <li>Interest in creative thinking</li> </ul> | <b>Duration</b><br>1 semester | <b>Workload</b><br>187.5 hours  |                  |
| <b>Recommendations for Preparation</b>   |  |  |                               |   |                  |
| Students can benefit from prior knowledge in creativity techniques and problem solving strategies as provided in the unit "Creative Problem Solving".  |  |  |                               |   |                  |
| <b>Content and Educational Aims</b>  |  |  |                               |   |                  |
| <p>The marketing concept is one of the most vital, yet, perhaps the most often misunderstood concept in business management. Identifying target customers and their needs and developing products, services and brands designed to fulfill these needs is the major prerequisite for a successful business endeavor. Without being able to create relevant value for a well-defined group of target customers, a company will not operate successfully in the long run.</p> <p>This is an integrative and applications-oriented module in marketing planning and strategy. With a strong focus on customer-orientated marketing, the module spans across to main topics. Topic A covers the marketing environment, consumer behavior, market segmentation and positioning. In topic B the focus is shifted to the operational decision-making processes in marketing such as product, pricing or distribution decisions.</p> <p>The main objective of this course is to provide students with a sound understanding of the basic marketing concepts and how they are applied in practice. Students will be able to analyze markets, competitors and customers and to define relevant markets and market segments. The lecture part of this module provides the relevant concepts and theories on marketing management in an interactive manner. In the seminar part, students will apply this knowledge to real world challenges in marketing.</p> |  |  |                               |   |                  |
| <b>Intended Learning Outcomes</b>  |  |  |                               |   |                  |
| By the end of this module, students should be able to  |  |  |                               |   |                  |
| <ul style="list-style-type: none"> <li>identify, explain and solve critical marketing challenges such as the impact of demographic change on consumer segments or the changing influence of market participants in social media;</li> <li>develop a sound understanding about the mechanisms behind the marketing of branded goods and services;</li> <li>connect theoretical knowledge and practical tools (e.g. online surveys) to explain and evaluate marketing strategies;</li> </ul>   |  |  |                               |   |                  |

- combine entrepreneurial spirit with marketing knowledge when creating and testing own marketing concept;
- utilize analytical skills and apply relevant tools as required in the discipline.

***Usability and Relationship to other Modules***

- Mandatory elective for a major in IBA and GEM
- One of six possible pre-requisites for a major in IBA and GEM
- One of ten possible pre-requisites for 3<sup>rd</sup> year IBA/GEM Thesis and 3<sup>rd</sup> year IBA/ GEM Career courses
- This module prepares students for a Bachelor Thesis focusing on topics in marketing
- The practical part of this module corresponds with the knowledge students acquire in the unit “Creative Problem Solving”

***Assessment***

Type: Term Paper

Length: 4.000 words

Weight: 100%

Scope: All intended learning outcomes of the module

## 7.10 Organization and Human Resource Management

|   |   |  |                    |  |           |
|---|---|--|--------------------|--|-----------|
| <b>Module Name</b>  |   |  | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Organization and Human Resource Management  |   |  | CO-605             | Year 2 (CORE)  | 7.5       |
| <b>Module Components</b>  |   |  |                    |  |           |
| <b>Number</b>   | <b>Name</b>   |  | <b>Type</b>        | <b>CP</b>  |           |
| CO-605-A  | Organization and Human Resource - Seminar   |  | Seminar            | 5  |           |
| CO-605-B  | Organization and Human Resource - Tutorial  |  | Tutorial           | 2.5  |           |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |  |                    | <b>Mandatory Status</b>  |           |
| Prof. Dr. Olivier Berthod   | <ul style="list-style-type: none"> <li>International Business Administration (IBA)</li> </ul> |  |                    | Mandatory elective for GEM and IBA   |           |
| <b>Entry Requirements</b>   |   |  | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <b>Pre-requisites</b>   | <b>Co-requisites</b>  | <b>Knowledge, Abilities, or Skills</b>   | annually           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Tutorial (17.5 hours)</li> <li>Private Study (135 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> Microeconomics and Macroeconomics   | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Academic writing skills</li> <li>Basic understanding of business</li> </ul> | <b>Duration</b>    | <b>Workload</b>  |           |
|   |   |  | 1 semester         | 187.5 hours  |           |
| <b>Recommendations for Preparation</b>  |   |  |                    |  |           |
| Before the first session, students should read the short article by John Beeson "Five questions every leader should ask about organizational design", published in the Harvard Business Review, January 2014.   |   |  |                    |  |           |
| <b>Content and Educational Aims</b>   |   |  |                    |  |           |
| <p>This module introduces students to fundamental concepts in organization theory, organizational behavior and human resource (HR) management, such as scientific management, the human relations school, learning, motivation, or turnover. It transmits an overview of organization theories and the history of managerial thought, as well as central concepts for diagnosing and shaping organizations, and the basic functions of human resource (HR) management. The module relies on project-based instruction and trains the students' capacity to communicate their organizational analysis and recommendations. The seminar introduces the concepts students need to know and work with in order to present a successful work at the end of the term. In the tutorials, students train their research and presentation skills and further recess the material taught in the seminar via group discussions of concepts, case study problems, and guest lectures by practitioners in order to reflect upon their own work.</p> <p>This module transmits fundamental knowledge of organizations applied to a diversity of fields and sectors. Knowledge of organization theories and organizational behavior are fundamentals of undergraduate studies in the field of management. With its didactic focus on communication skills as conveyors of knowledge in organizational analysis, this module provides our students with a solid preparation to their future professional responsibilities. Finally, understanding organizational dynamics and behavior in organizations further enables students to become responsible managers with an eye for the consequences of their decisions for the people they work with.</p> |   |  |                    |  |           |

**Intended Learning Outcomes**

By the end of this module, students should be able to

- label fundamental dimensions of organizational analysis and HRM;
- deduce organizational problems based on complementary dimensions;
- infer solutions to organizational problems as a team effort;
- predict and discuss the influence of organizational decisions on people;
- practice research and presenting as means to plan for and communicate organizational development issues.

**Usability and Relationship to other Modules**

- Mandatory elective for a major in GEM or IBA
- This module builds on the knowledge acquired in the first-year modules “Introduction to International Business” and expands students’ understanding of how businesses are run by focusing on the design of organizations, work and the management of human resource. This module benefits from the contents taught in its accompanying module “Marketing” as the combination of the two modules further puts the management of organizational structures into the perspective of the firm’s positioning in its market. This module provides knowledge that is required for the third-year GEM modules “Information Economics” and “Managing Public and Nonprofit Organizations”.

**Assessment**

Type: Presentation

Duration: 45 minutes

Weight: 100%

Scope: All intended learning outcomes of the module

The module gives the possibility to do an additional preparatory presentation during the class for personal feedback on one’s own performing in front of an audience. This additional presentation is a voluntary task that can improve the grade by 0.33 points (German grading system) but is not required to reach the best grade in the module (1.0).

## 7.11 Advanced Econometrics

|   |   |  |                    |  |           |
|---|---|--|--------------------|--|-----------|
| <b>Module Name</b>  |   |  | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Advanced Econometrics   |   |  | CA-S-GEM-801       | Year 3<br>(Specialization)   | 5         |
| <b>Module Components</b>  |   |  |                    |  |           |
| <b>Number</b>   | <b>Name</b>   |  |                    | <b>Type</b>  | <b>CP</b> |
| CA-GEM-801  | Advanced Econometrics   |  |                    | Seminar  | 5         |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |  |                    | <b>Mandatory Status</b>  |           |
| Prof. Dr. Colin Vance   | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |  |                    | Mandatory elective for GEM and IBA   |           |
| <b>Entry Requirements</b>   |   |  | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i>   | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i>   | Annually           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Private Study (90 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> Major in IBA or GEM<br><input checked="" type="checkbox"/> Method and Skills elective "Econometrics"  | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Notions of substantive versus statistical significance</li> <li>Basic knowledge of econometrics</li> <li>Academic writing skills</li> </ul> | <b>Duration</b>    | <b>Workload</b>  |           |
|   |   |  | 1 semester         | 125 hours  |           |
| <b>Recommendations for Preparation</b>  |   |  |                    |  |           |
| <p>Students prepare best for this module by reading Edward Leamer's seminal article "Let's take the con out of Econometrics," published in the American Economic Review in 1983. The article covers many of the key issues that econometricians still grapple with today, such as whether randomization is essential.</p>   |   |  |                    |  |           |
| <b>Content and Educational Aims</b>   |   |  |                    |  |           |
| <p>The goal of this module is to build on the knowledge acquired in the Econometrics module, covering select advanced concepts of regression analysis as it applies to empirical social science research. The prime learning objective is to understand different approaches of secondary data analysis, where and how to apply particular econometric estimators, and their limitations. Particular emphasis will be placed on identifying exogenous sources of variation and methods for identifying causal relationships between variables. The class will also cover some of the opportunities and pitfalls associated with the analysis of "big data", drawing on current examples and available data. Textbook-based lectures ensure the transmission of the necessary knowledge. Exercises in class further promote the students' capacity to differentiate and debate the merits of alternative econometric techniques for testing particular hypotheses.</p> <p>This module aims at consolidating students' command of econometrics and related statistical techniques. A command of econometrics constitutes an important fundament for undergraduate studies in the fields of economics and helps students to critically appraise scientific statements about causality in many situations, including professional settings. This module helps students to assess and criticize econometric findings in academic papers and promotes their capacity to differentiate between bias and statistical precision in interpreting their own econometric results.</p> |   |  |                    |  |           |

**Intended Learning Outcomes**

By the end of this module, students should be able to

- identify the econometric method appropriate to specific data types;
- implement the method using the R-software and interpreting the results;
- design a research project that applies an econometric model to secondary data;
- write a term paper that develops a thesis, derives a testable hypothesis, presents results, and draws conclusions;
- articulate model results in terms that a lay person can understand;
- discriminate between the notions of “economic significance” and “statistical significance”.

**Usability and Relationship to other Modules**

- Mandatory elective specialization module for 3<sup>rd</sup> year GEM and IBA major students.
- This module builds on the second-year methods module “Econometrics”, as well as on models and topics from the first-year modules “Microeconomics” and “Macroeconomics” and from the second-year modules “Environmental and Resource Economics” and “Development Economics”. The module expands students’ understandings of econometrics beyond the level of introduction towards advanced techniques and applications.

**Assessment**

Type: Term Paper

Length: 2.500 words

Weight: 100%

Scope: All intended learning outcomes of the module

## 7.12 Managing Public and Nonprofit Organizations

|   |   |  |           |
|---|---|--|-----------|
| <b>Module Name</b>  | <b>Module Code</b>  | <b>Level (type)</b>  | <b>CP</b> |
| Managing Public Nonprofit Organizations   | CA-S-GEM-802  | Year 3<br>(Specialization)   | 5         |
| <b>Module Components</b>  |   |  |           |
| <b>Number</b>   | <b>Name</b>   | <b>Type</b>  | <b>CP</b> |
| CA-GEM-802  | Managing Public and Nonprofit Organizations   | Seminar  | 5         |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  | <b>Mandatory Status</b>  |           |
| Prof. Dr.<br>Olivier<br>Berthod   | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> | Mandatory elective for GEM and IBA   |           |
| <b>Entry Requirements</b>   | <b>Frequency</b>  | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i> Co-<br>requisites    Knowledge,<br>Abilities, or<br>Skills<br><br><input checked="" type="checkbox"/> Major in IBA or GEM <input checked="" type="checkbox"/> None  | Annually  | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Private study (90 hours)</li> </ul> |           |
|   | <b>Duration</b>   | <b>Workload</b>  |           |
|   | 1 semester  | 125 hours  |           |
| <b>Recommendations for Preparation</b>  |   |  |           |
| Students should read the paper "If apples were oranges: the public/nonprofit/business nexus in Peter Drucker's work" by Guy and Hitchcock, published in 2000 in the Journal of Management History (vol. 6, issue 1).  |   |  |           |
| <b>Content and Educational Aims</b>   |   |  |           |
| <p>This module transmits state-of-the-art knowledge on management theories of organizations in the public and nonprofit sectors. Specifically, the module helps students debunking sectoral differences more clearly, as well as the challenges that arise at the interplay of sectors, for example when business firms contract with government, or when governments outsource service provision to nonprofit organizations in the face of policy problems that cannot be solved by markets or governments alone. A particular focus is therefore put on (i) contrasting topics of organization, strategic management and marketing, and their applicability to nonprofit and public organizations (e.g., income generation, purpose, public service motivation, or decision-making), and on (ii) deciphering the cross-sectoral implications of institutional change in society and markets.</p> <p>With its didactic focus on presenting and communication skills as conveyors of knowledge, this module provides our students with a solid preparation to their future professional responsibilities. Finally, understanding dynamics in cross-sector settings further enables students to become responsible managers with an eye for the consequences of their decisions for the broader organizational fields they will work in.</p> |   |  |           |

***Intended Learning Outcomes***

By the end of this module, students should be able to

- differentiate the interests and main challenges of the three sectors at play in societies and markets;
- label and discuss fundamental distinctive dimensions of public and nonprofit organizations;
- articulate the managerial challenges of managing public organizations and nonprofits compared to private firms;
- infer solutions to cross-sector problems in real case situations;
- explain the notion of institutional change from the perspectives of economics, management and organization theory
- practice field research and presenting the results as means to plan for and communicate solutions to problems typical for public or nonprofit organizations.

***Usability and Relationship to other Modules***

- Mandatory elective specialization module for 3<sup>rd</sup> year IBA and GEM major students.
- This module builds on models and topics from the first-year modules “Introduction to International Business” and “Introduction to Finance and Accounting” and all second-year modules in GEM. The purpose is thereby to widen the scope of applications of the general management theories and concepts taught in the program and to stimulate interest in career paths that reach beyond the corporate world and business sector.

***Assessment***

Type: Presentation

Duration: 30 minutes  
Weight: 100%

Scope: All intended learning outcomes of the module

### 7.13 Information Economics

|   |   |   |                                    |  |
|---|---|---|------------------------------------|--|
| <b>Module Name</b>  |   | <b>Module Code</b>  | <b>Level (type)</b>                | <b>CP</b>  |
| Information Economics   |   | CA-S-GEM-803  | Year 3<br>(Specialization)         | 5  |
| <b>Module Components</b>  |   |   |                                    |  |
| <i>Number</i>   | <i>Name</i>   |   | <i>Type</i>                        | <i>CP</i>  |
| CA-GEM-803  | Information Economics   |   | Seminar                            | 5  |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |   | <b>Mandatory Status</b>            |  |
| Prof. Dr. Gert Brunekreeft  | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |   | Mandatory elective for GEM and IBA |  |
| <b>Entry Requirements</b>   |   |   | <b>Frequency</b>                   | <b>Forms of Learning and Teaching</b>  |
| <i>Pre-requisites</i>   | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i>  | Annually                           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Private Study (90 hours)</li> </ul> |
| <input checked="" type="checkbox"/> Major in IBA or GEM   | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Writing skills</li> <li>Logical and causality-based reasoning</li> </ul> | <b>Duration</b>                    | <b>Workload</b>  |
|   |   |   | 1 semester                         | Total: 125 hours   |
| <b>Recommendations for Preparation</b>  |   |   |                                    |  |
| Students prepare best for this module by reviewing their notes and material from first-year modules in Microeconomics and Macroeconomics.   |   |   |                                    |  |
| <b>Content and Educational Aims</b>   |   |   |                                    |  |
| This module relies on applied microeconomics and policy analysis in the field of information economics. The course aims to transmit skills in the application of theory to analyze real-world cases. The topics to be covered are the microeconomics of information, competition policy, economics of regulation, network externalities, and the economics of standards, including new technological developments. Case studies will rely predominantly on network industries like energy markets, telecommunications, and internet. The module introduces the concepts and theories students need to know and work with in order to submit a successful paper at the end of the term. The students further recess the subject matter taught in the seminar in group discussions of concepts and case study problems. |   |   |                                    |  |
| <b>Intended Learning Outcomes</b>   |   |   |                                    |  |
| Upon completion of this module, students will be able to  |   |   |                                    |  |
| <ul style="list-style-type: none"> <li>distinguish the key theoretical dimensions of information economics;</li> <li>apply microeconomics to analyze real-world cases in information economics;</li> <li>appraise examples of economic policies in information economics;</li> <li>assess and discuss key arguments in current debates on information;</li> <li>reflect on what constitute a concise and clear piece of academic writing.</li> </ul>  |   |   |                                    |  |
| <b>Usability and Relationship to other Modules</b>  |   |   |                                    |  |
| <ul style="list-style-type: none"> <li>Mandatory elective specialization module for 3<sup>rd</sup> year GEM and IBA students</li> </ul>   |   |   |                                    |  |

- This module builds on models and topics from the first-year modules “Microeconomics” and “Macroeconomics” and from the second-year modules “Environmental and Resource Economics” and “International Economics”. The module expands students’ understandings of these disciplines towards an in-depth exploration of the economic analysis and implications of networks and related industries and technologies.

***Assessment***

Type: Term paper

Length: 2.500-3.000 words

Weight: 100%

Scope: All intended learning outcomes of the module

## 7.14 Lean Management

|  |   |                                    |  |                |
|--|---|------------------------------------|--|----------------|
| <b>Module Name</b><br>Lean Management  |   | <b>Module Code</b><br>CA-S-IBA-801 | <b>Level (type)</b><br>Year 3<br>(Specialization)  | <b>CP</b><br>5 |
| <b>Module Components</b>   |   |                                    |  |                |
| <i>Number</i>  | <i>Name</i>   | <i>Type</i>                        |  | <i>CP</i>      |
| CA-IBA-801   | Lean Management   | Lecture                            |  | 5              |
| <b>Module Coordinator</b><br><br>Prof. Dr.-Ing.<br>Steffen Christoph<br>Eickemeyer   | <b>Program Affiliation</b><br><br>• International Business Administration (IBA) |                                    | <b>Mandatory Status</b><br><br>Mandatory elective for IBA and GEM                                      |                |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>                   | <b>Forms of Learning and Teaching</b>  |                |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>  | annually                           | <ul style="list-style-type: none"> <li>Lecture (35 hours)</li> <li>Private Study (90 hours)</li> </ul> |                |
| <input checked="" type="checkbox"/> Major in IBA or GEM  | <input checked="" type="checkbox"/> None  |                                    |  |                |
|  |   | 1 semester                         | 125 hours  |                |
| <b>Recommendations for Preparation</b>   |   |                                    |  |                |
| <p>Before the first session, students should familiarize themselves with: Lean Management Beyond Manufacturing, A Holistic Approach, Sanjay Bhasin, Springer; McAfee, A. / Brynjolfsson, E. (2012). Big Data: The Management Revolution. Harvard Business Review, October 2012, 1-9; Industry 4.0: Managing The Digital Transformation, Alp Ustundag and Emre Cevikcan, Springer; "The Digital Transformation of the Automotive Industry" by Uwe Winkelhake, Springer.</p>   |   |                                    |  |                |
| <b>Content and Educational Aims</b>  |   |                                    |  |                |
| <p>The module engages with Lean Production and Lean Management. Articles are used to highlight issues scientists and managers are confronted with in practice and theory. A special emphasis is given to developing an understanding of how companies, especially production companies, are formed and shaped by ideas and concepts.</p> <p>Furthermore, this module examines the nature of organizations in a changing context and applies theories and strategies for managing change in a business environment. The module also engages in key issues effecting business life, focusing on production analysis. Topics are e.g. change management and time management. Target is to develop an understanding of the phenomenon of change and the factors, which facilitate and hinder change.</p> <p>The lecture should familiarize students with the "Lean Philosophy". Students experience the success factors of Lean Management, Lean Organization and Lean Office culture. They should be able to understand and apply the underlying methods. In addition, they deal critically with the application limits of lean management.</p> <p>The purpose is also to stimulate interest in further exploration of these topics, for continued research and thesis work. The overall objective is to provide students with an explicit Lean Management-based mindset and a set of conceptual, analytical and practical tools to come to terms with contemporary related topics such as industry 4.0 – so that students should be able to challenge and improve existing practices and theories.</p> |   |                                    |  |                |
| <b>Intended Learning Outcomes</b>  |   |                                    |  |                |
| <p>By the end of this module, students should be able to:</p> <ul style="list-style-type: none"> <li>illustrate an understanding of contemporary topics in Lean Management relating to theories, models, research methods and industrial applications;</li> <li>analyse published journal articles in the field of Lean Management to apply these theories on real world cases;</li> <li>use basics of Production Management and Lean Office Culture;</li> <li>choose and use the right Lean Principles;</li> <li>develop a sensibility for the phenomenon of change and factors which facilitate or hinder change;</li> <li>discuss strategies for managing change in an industrial environment;</li> <li>explain tips and tricks for application and implementation;</li> </ul>  |   |                                    |  |                |

- practice of adequate and industrial relevance behaviour in all topics will prepare for later business life.

***Usability and Relationship to other Modules***

- Mandatory elective specialization modules for 3<sup>rd</sup> year IBA and GEM students.

***Assessment***

Type: Presentation

Duration: 40 minutes

Weight: 100%

Scope: All intended learning outcomes of the module

## 7.15 Managerial Accounting

|  |   |  |   |                |
|--|---|--|---|----------------|
| <b>Module Name</b><br>Managerial Accounting  |   | <b>Module Code</b><br>CA-S-IBA-802     | <b>Level (type)</b><br>Year 3<br>(Specialization)   | <b>CP</b><br>5 |
| <b>Module Components</b>   |   |  |   |                |
| <i>Number</i>  | <i>Name</i>   | <i>Type</i>                            |   | <i>CP</i>      |
| CA-IBA-802   | Managerial Accounting   | Seminar                                |   | 5              |
| <b>Module Coordinator</b><br>Prof. Dr. Tilo Halaszovich  | <b>Program Affiliation</b><br><ul style="list-style-type: none"> <li>International Business Administration (IBA)</li> </ul> |  | <b>Mandatory Status</b><br>Mandatory elective for IBA and GEM   |                |
| <b>Entry Requirements</b>  |   | <b>Frequency</b><br>annually           | <b>Forms of Learning and Teaching</b><br><ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Private Studies (90 hours)</li> </ul> |                |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i> |   |                |
| <input checked="" type="checkbox"/> Major in IBA or GEM  | <input checked="" type="checkbox"/> None  | <b>Duration</b><br>1 semester          | <b>Workload</b><br>125 hours  |                |
| <b>Recommendations for Preparation</b><br>Students are expected to refresh their knowledge obtained from the module "Introduction to Finance and Accounting".  |   |  |   |                |
| <b>Content and Educational Aims</b><br><p>The module aims to provide an overview and understanding of frontline topics in managerial accounting. The purpose is also to deepen the understanding and to stimulate interest in further exploration of these topics. The overall objective is to provide students with an explicit set of conceptual, analytical and practical tools to come to terms with contemporary accounting issues thus enabling them to challenge and improve existing practices and theories.</p> <p>The module covers a set of accounting topics characterized by (a) being important in contemporary businesses, both from a theoretical and practical point of view, and (b) not having received extensive coverage in previous modules.</p> |   |  |   |                |
| <b>Intended Learning Outcomes</b><br>By the end of this module, students should be able to <ul style="list-style-type: none"> <li>illustrate an understanding of contemporary topics in accounting relating to theories, models, and research methods, such as differences between national accounting principles and their implications for international firms;</li> <li>analyze published journal articles in the field of accounting;</li> <li>discuss contemporary accounting phenomena and practices as outlined in academic and professional publications;</li> <li>apply contemporary accounting practices to real-world challenges.</li> </ul>  |   |  |   |                |
| <b>Usability and Relationship to other Modules</b><br><ul style="list-style-type: none"> <li>Mandatory elective specialization modules for 3<sup>rd</sup> year IBA and GEM students</li> </ul>   |   |  |   |                |
| <b>Assessment</b><br>Type: Term paper<br>Scope: All intended learning outcomes of the module<br>Duration: 2.500 words<br>Weight: 100%  |   |  |   |                |

## 7.16 Contemporary Topics in Marketing

|   |  |  |   |   |
|---|--|--|---|---|
| <b>Module Name</b><br>Contemporary Topics in Marketing  |  | <b>Module Code</b><br>CA-S-IBA-803   | <b>Level (type)</b><br>Year 3<br>(Specialization)   | <b>CP</b><br>5  |
| <b>Module Components</b>  |  |  |   |   |
| <i>Number</i>   | <i>Name</i>                              | <i>Type</i>  | <i>CP</i>   |   |
| CA-IBA-803  | Contemporary Topics in Marketing         | Seminar  | 5   |   |
| <b>Module Coordinator</b><br>Prof. Dr. Tilo Halaszovich   |  | <b>Program Affiliation</b><br><ul style="list-style-type: none"> <li>International Business Administration (IBA)</li> <li>Global Economics and Management (GEM)</li> </ul> |   | <b>Mandatory Status</b><br>Mandatory elective for IBA and GEM |
| <b>Entry Requirements</b>   |  | <b>Frequency</b><br>annually   | <b>Forms of Learning and Teaching</b><br><ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Private Studies (90 hours)</li> </ul> |   |
| <i>Pre-requisites</i>   | <i>Co-requisites</i>                     | <i>Knowledge, Abilities, or Skills</i>   | <b>Duration</b>   |   |
| <input checked="" type="checkbox"/> Major in IBA or GEM   | <input checked="" type="checkbox"/> None | <ul style="list-style-type: none"> <li>Basic Concepts of Marketing</li> </ul>  | 1 semester  |   |
|   |  |  | <b>Workload</b><br>125 hours  |   |
| <b>Recommendations for Preparation</b>  |  |  |   |   |
| It is recommended that students chose the module “Marketing” in their second year to gain in-depth knowledge of basic marketing concepts prior to this specialization. At least, students should familiarize themselves with basic marketing concepts as outlined in the syllabus of the module “Marketing”.  |  |  |   |   |
| <b>Content and Educational Aims</b>   |  |  |   |   |
| The module aims to provide an overview and understanding of frontline topics in marketing. The purpose is also to stimulate interest in further exploration of these topics, for continued research and thesis work. The overall objective is to provide students with an explicit marketing-based mindset and a set of conceptual, analytical and practical tools to come to terms with contemporary marketing issues thus enabling them to challenge and improve existing practices and theories. |  |  |   |   |
| The module covers a set of marketing topics characterized by (a) being important in contemporary marketing, both from a theoretical and practical point of view, and (b) not having received extensive coverage in previous marketing-related modules.  |  |  |   |   |
| <b>Intended Learning Outcomes</b>   |  |  |   |   |
| By the end of this module, students should be able to   |  |  |   |   |
| <ul style="list-style-type: none"> <li>illustrate an understanding of contemporary topics in marketing relating to theories, models, research methods and empirical phenomena;</li> <li>analyze and assess published journal articles in the field of marketing;</li> <li>discuss contemporary marketing phenomena and practices;</li> <li>design an adequate empirical research approach to analyze a contemporary topic in marketing.</li> </ul>  |  |  |   |   |
| <b>Usability and Relationship to other Modules</b>  |  |  |   |   |
| <ul style="list-style-type: none"> <li>Mandatory elective specialization module for 3<sup>rd</sup> year IBA and GEM students</li> </ul>   |  |  |   |   |
| <b>Assessment</b>   |  |  |   |   |
| Type: Term Paper  |  | Length: 2.500 words  |   |   |
|   |  | Weight: 100%   |   |   |
| Scope: All intended learning outcomes of the module   |  |  |   |   |



## 7.17 Internship / Startup and Career Skills

|   |  |  |  |   |
|---|--|--|--|---|
| <b>Module Name</b>  |  | <b>Module Code</b>   | <b>Level (type)</b>  | <b>CP</b>   |
| Internship / Startup and Career Skills  |  | CA-INT-900   | Year 3 (CAREER)  | 15  |
| <b>Module Components</b>  |  |  |  |   |
| <i>Number</i>   | <i>Name</i>  | <i>Type</i>  | <i>CP</i>  |   |
| CA-INT-900-0  | Internship   | Internship   | 15   |   |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>   | <b>Mandatory Status</b>  |  |   |
| Predrag Tapavicki &<br><br>Christin Klähn (CSC Organization);<br><br>SPC / Faculty Startup Coordinator (Academic responsibility); | <ul style="list-style-type: none"> <li>CAREER module for undergraduate study programs</li> </ul> | Mandatory for all undergraduate study programs except IEM  |  |   |
| <b>Entry Requirements</b>   |  | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |   |
| <i>Pre-requisites</i><br><br><input checked="" type="checkbox"/> at least 15 CP from CORE modules in the major                    | <i>Co-requisites</i><br><br><input checked="" type="checkbox"/> None                             | <i>Knowledge, Abilities, or Skills</i><br><br><ul style="list-style-type: none"> <li>Information provided on CSC pages (see below)</li> <li>Major specific knowledge and skills</li> </ul> | annually   | <ul style="list-style-type: none"> <li>Internship/Start-up</li> <li>Internship Event</li> <li>Seminars, Info-sessions, Workshops and Career Events</li> <li>Self-Study, Readings, Online Tutorials</li> </ul> |
|   |  | <b>Duration</b>  | <b>Workload</b>  |   |
|   |  | 1 semester   | 375 Hours consisting of: <ul style="list-style-type: none"> <li>Internship (308 hours)</li> <li>Workshops (33 hours)</li> <li>Internship Event (2 hours)</li> <li>Self-study (32 hours)</li> </ul> |   |
| <b>Recommendations for Preparation</b>  |  |  |  |   |

- Reading the information in the menu sections “Internship Information”, “Career Events”, “Create Your Application” and “Seminars & Workshops” at the Career Services Center website <http://csc-microsite.user.jacobs-university.de/>
- Completing all four online tutorials about the job market preparation and the application process ( <http://csc-microsite.user.jacobs-university.de/create-your-application/tutorials/>)
- Participation at Internship Events of earlier classes

### **Content and Educational Aims**

The aims of the internship module are reflection, application, orientation and development: For students to reflect on their interests, knowledge, skills, their role in society, the relevance of their major subject in society, to apply these skills and this knowledge in real life whilst getting practical experience, to find professional orientation, and develop their personality and in their career. The module supports the programs’ aims of preparing students for gainful, qualified employment and the development of their personality.

The full-time internship must be related to major area of study and extends over a minimum period of two consecutive months, normally scheduled just before the 5<sup>th</sup> semester, with the internship event and submission of the internship report in the 5<sup>th</sup> semester. Upon approval by the SPC and CSC, the internship may take place at other times, such as before teaching starts in the 3<sup>rd</sup> or after teaching finishes in the 6<sup>th</sup> semester. The Study Program Coordinator or their faculty delegate approves the intended internship a priori by reviewing the tasks in either the Internship Contract or Internship Confirmation from the respective internship institution or company. Further regulations as set out in the Policies for Bachelor Studies apply.

The internship will be gradually prepared in semesters 1 to 4 by a series of mandatory information sessions, seminars and career events.

The purpose of the Career Services Information Sessions is to provide all students with basic facts about the job market in general and especially in Germany and the EU, and services provided by the Career Services Center.

In the Career Skills Seminars, students will learn how to engage in the internship/job search, how to create a competitive application (CV, Cover Letter etc.) and how to successfully conduct job interviews and/or assessment centers. In addition to this mandatory part, students can customize their set of skills regarding the application challenges and intended career path in elective seminars.

Finally, during the Career Events organized by the Career Services Center (e.g. the annual Jacobs Career Fair and single employer events on and off campus), students will have the opportunity to apply the acquired job market skills in an actual internship/job search situation and to gain a desired internship in a high-quality environment and with excellent employers.

As an alternative to the full-time internship, students can apply for the StartUp-Option. Following the same schedule as the full-time internship, the StartUp Option allows students who are particularly interested in founding their own company to focus on the development of their business plan over a period of two consecutive months. Participation in the StartUp-Option depends on a successful presentation of the initial StartUp-idea. This presentation will be held at the beginning of the 4<sup>th</sup> semester. A jury of faculty members will judge the potential to realize the idea and approve the participation of the students. The StartUp-Option is supervised by the Faculty StartUp Coordinator. At the end of StartUp-Option students submit their business plan. Further regulations as set out in the Policies for Bachelor Studies apply.

The concluding Internship Event will be conducted in each study program (or a cluster of related study programs) and will formally conclude the module by providing students the opportunity to present their internships and reflect on the lessons learned within their major area of study. The purpose is not only to self-reflect the whole process but also to create the professional network within the academic community, especially with the aspect of entering the Alumni Network after graduation. It is recommended that all three classes of the same major are present at this event to enable the creation of networks between older and younger students and to create a learning environment for younger students in the sense of “lessons learned” effect from diverse internships of their elder fellow students.

**Intended Learning Outcomes**

By the end of this module, students should be able to:

- describe the scope and the functions of the employment market and personal career development;
- apply professional, personal and career-related skills for the modern labor market, including self-organization, initiative and responsibility, communication, intercultural sensitivity, team and leadership skills etc.;
- independently manage their own career orientation processes: identify personal interests, select appropriate internship destinations or start-up opportunities, conduct interviews, pitches or assessment centers, negotiate related employment, funding or support conditions (such as salary, contract, funding, supplies, work space, etc.);
- apply specialist skills and knowledge acquired during their studies to solve problems in a professional environment and reflect on their relevance in employment and society;
- justify professional decisions based on theoretical knowledge and academic methods;
- reflect on their professional conduct in the context of expectations by and consequences for employers and the society;
- reflect on and set own targets for further development of their knowledge, skills, interests and values;
- establish and expand contacts with potential employers or business partner and possibly other students and alumni to build their own professional network to create employment opportunities in the future;
- discuss observations and reflection in a professional network.

**Usability and Relationship to other Modules**

- Mandatory for a major in BCCB, Chemistry, CS, EES, GEM, IBA, IRPH, Psychologie, Math, MCCB, Physics, IMS and ISS.
- This module applies skills and knowledge acquired in previous modules to a professional environment and provides an opportunity to reflect on their relevance in employment and society. It may lead to Thesis topics.

**Assessment**

Type: Internship Report or Business Plan and Reflection  
Scope: All intended learning outcomes

Length: approx. 3.500 words  
Weight: 100%

## 7.18 Bachelor Thesis and Seminar GEM

|  |   |  |   |           |
|--|---|--|---|-----------|
| <b>Module Name</b>   |   | <b>Module Code</b>   | <b>Level (type)</b>   | <b>CP</b> |
| Bachelor Thesis and Seminar GEM  |   | CA-GEM-800   | Year 3 (CAREER)   | 15        |
| <b>Module Components</b>   |   |  |   |           |
| <i>Number</i>  | <i>Name</i>   |  | <i>Type</i>   | <i>CP</i> |
| CA-GEM-800-T   | Bachelor Thesis   |  | Thesis  | 12        |
| CA-GEM-800-S   | Research Seminar  |  | Seminar   | 3         |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |  | <b>Mandatory Status</b>   |           |
| Prof. Dr. Olivier Berthod  | <ul style="list-style-type: none"> <li>Global Economics and Management (GEM)</li> </ul> |  | Mandatory for GEM   |           |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>   |           |
| <i>Pre-requisites</i>  | <i>Co-requisites</i>  | <i>Knowledge, Abilities, or Skills</i>                           | <ul style="list-style-type: none"> <li>Seminar (17,5 hours)</li> <li>Supervision (3.5 hours)</li> <li>Own research and writing (354 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> Major in GEM in graduating year  | <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>Writing skills</li> </ul> |   |           |
|  |   | 1 semester   | 375 hours   |           |
| <b>Recommendations for Preparation</b>   |   |  |   |           |
| <b>Content and Educational Aims</b>  |   |  |   |           |
| <p>In this module, students conduct in-depth research on a specific topic related to the GEM major. The topic may either be part of the supervisor's ongoing research or be suggested by the student her/himself, but supervisors hold the right to specify the topics ultimately. Data sources can be primary or secondary and can include online datasets, interviews, direct observations, or self-conducted surveys. Students will be evaluated on the breadth and quality of their research. The thesis must be submitted to a supervisor by the end of the examination period. The accompanying research seminar shows students how to narrow down a topic into a meaningful and manageable piece of research. Students will receive advice and learn how to structure their argumentation, their methodological approach, as well as on the presentation and visualization of their results. Moreover, students will acquire proficiency in techniques of localizing and utilizing academic output (monographs, edited volumes, journal articles, etc.) for their own research work. Ethical academic conduct and the various academic standard requirements in citation, referencing, and data documentation will be discussed in further detail.</p> <p>In this module, students practice academic research and writing independently, a necessary first step towards graduate studies in any field. Understanding the making of science by practicing it, further enables students to become responsible managers and citizens with a critical eye for the logical reasoning, data collection and analysis underlying scientific findings and discussions of topics that are of public and/or professional interest to them.</p> |   |  |   |           |

**Intended Learning Outcomes**

*On completion of this module, students should be able to:*

1. independently plan and organize advanced learning processes;
2. design and implement appropriate research methods taking full account of the range of alternative techniques and approaches;
3. collect, assess and interpret relevant information;
4. draw scientifically founded conclusions that consider social, scientific and ethical insights;
5. apply their knowledge and understanding to a context of their choice;
6. develop, formulate and advance solutions to problems and arguments in their subject area, and defend these through argument;
7. discuss information, ideas, problems and solutions with specialists and non-specialists;

**Usability and Relationship to other Modules**

- This module builds on all previous modules of the program. Students apply the knowledge, skills and competencies they acquired and practiced during their studies, including research methods and the ability to acquire additional skills independently as and if required.

**Assessment**

Type: Thesis

Length: approx. 6,000 – 8,000 words (15 – 25 pages), excluding front- and back matter

Weight: 80%

Scope: All intended learning outcomes, mainly 1-6.

Type: Presentation

Duration: approx. 15 to 30 minutes

Scope: The presentation focusses mainly on ILOs 6 and 7, but by nature of these ILOs also touches on the others.

Weight: 20%

Two separate assessments are justified by the size of the module and the fact that the justification of solutions to problems and arguments (ILO 6) and discussion (ILO 7) should at least have verbal elements. The weights of the assessments are commensurate with the sizes of the respective module components.

## 7.19 Jacobs Track Modules

### 7.19.1 Methods and Skills Modules

#### 7.19.1.1 Applied Calculus

|   |   |  |  |                                       |   |
|---|---|--|--|---------------------------------------|---|
| <b>Module Name</b><br>Applied Calculus                            |   | <b>Module Code</b><br>JTMS-MAT-08                                | <b>Level (type)</b><br>Year 1<br>(Methods)   | <b>CP</b><br>5                        |   |
| <b>Module Components</b>  |   |  |  |                                       |   |
| <i>Number</i>   | <i>Name</i>   |  | <i>Type</i>  |                                       |   |
| JTMS-08   | Applied Calculus  |  | Lecture  | 5                                     |   |
| <b>Module Coordinator</b><br>Marcel Oliver, Tobias Preußer        | <b>Program Affiliation</b><br><ul style="list-style-type: none"> <li>Jacobs Track – Methods and Skills</li> </ul> |  | <b>Mandatory Status</b><br>Mandatory for GEM, IBA and IEM<br>Mandatory elective for EES  |                                       |   |
| <b>Entry Requirements</b>   |   |  | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b> |   |
| <i>Pre-requisites</i><br><input checked="" type="checkbox"/> None |   | <i>Co-requisites</i><br><input checked="" type="checkbox"/> None | <i>Knowledge, Abilities, or Skills</i><br><ul style="list-style-type: none"> <li>Knowledge of Mathematics at High School level (Functions, graphs of functions, linear and polynomial functions, logarithms and exponential function, basic trigonometric functions, elementary methods for solving systems of linear and nonlinear equations)</li> <li>Some familiarity with elementary Calculus (limits, derivatives) is helpful, but not required.</li> </ul> | annually                              | <ul style="list-style-type: none"> <li>Lectures (35 hours)</li> <li>Private Study (90 hours)</li> </ul> |
|   |   |  | <b>Duration</b><br>1 semester  | <b>Workload</b><br>125 hours          |   |
| <b>Recommendations for Preparation</b><br>None.                   |   |  |  |                                       |   |

**Content and Educational Aims**

This module is an introduction to Calculus for students in life sciences, applied engineering, humanities and social science majors. It gives a broad overview of the methods of Calculus, putting more emphasis on applications, rather than on mathematical rigor. Most of the concepts and methods are backed up by examples from chemistry, biology, economics and/or other sciences. In this module students enhance both their quantitative problem-solving skills as well as their conceptual understanding of mathematical methods.

The lecture comprises the following topics:

- Brief review of elementary functions and their graphs
- Intuitive understanding of limits; horizontal and vertical asymptotes
- Derivatives and their computation
- Applications of derivatives (interpretation of derivatives, their units, local linear approximation, error propagation, optimization problems)
- Brief introduction to functions of several variables, partial derivatives, local minima and maxima
- Integrals and their computation
- Applications of integrals (accumulated change, average value, applications in probability: density functions and cumulative distribution functions)
- Brief introduction to differential equations.

**Intended Learning Outcomes**

By the end of the module, students will be able to:

- apply the fundamental concepts of Calculus in structured situations;
- command the methods described in the content section of this module description to the extent that they can solve standard text-book problems reliably and with confidence;
- explain importance of the methods of Calculus in problems arising from applications;
- understand the methods of Calculus, used in other modules, as well as in scientific literature.

**Usability and Relationship to other Modules**

- The module is a mandatory / mandatory elective module of the Methods and Skills area that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules).
- The module serves as preparation for the 2<sup>nd</sup> year IEM CORE module Operations Research.
- This serves as preparation for the 1<sup>st</sup> year GEM and IBA modules Microeconomics, Macroeconomics and Introduction to Finance and Accounting
- A mathematically rigorous treatment of Calculus is provided in the module "Analysis I".
- The first year modules *Calculus and Elements of Linear Algebra I+II* can be used in place of the modules *Applied Calculus* and *Finite Mathematics*, respectively, to satisfy the graduation requirements in majors in which they are mandatory.
- Mandatory for GEM, IBA and IEM.
- Mandatory elective for EES.
- Elective for all other study programs.

**Assessment**

Type: Written examination

Duration: 120 min

Weight: 100%

Scope: All intended learning outcomes of this module

### 7.19.1.2 Applied Statistics with R

|   |   |  |  |           |
|---|---|--|--|-----------|
| <b>Module Name</b>  |   | <b>Module Code</b>   | <b>Level (type)</b>  | <b>CP</b> |
| Applied Statistics with R   |   | JTMS-MET-03  | Year 1<br>(Methods)  | 5         |
| <b>Module Components</b>  |   |  |  |           |
| <i>Number</i>   | <i>Name</i>   | <i>Type</i>  |  | <i>CP</i> |
| JTMS-03   | Applied Statistics with R   | Lecture & Lab  |  | 5         |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  | <b>Mandatory Status</b>  |  |           |
| Adalbert Wilhelm  | <ul style="list-style-type: none"> <li>Jacobs Track – Methods and Skills</li> </ul> | Mandatory for GEM and IEM,<br>Mandatory elective for ISS, IBA, Psychologie, IRPH |  |           |
| <b>Entry Requirements</b>   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i>   |   | annually   | <ul style="list-style-type: none"> <li>Lecture (17.5 hours)</li> <li>Lab (17.5 hours)</li> <li>Homework and self-study (90 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> None  | <i>Co-requisites</i> <i>Knowledge, Abilities, or Skills</i>                         | <b>Duration</b>  |  |           |
|   | <input checked="" type="checkbox"/> None  | 1 semester   | <b>Workload</b>  |           |
|   |   |  | 125 hours  |           |
| <b>Recommendations for Preparation</b>  |   |  |  |           |
| Get acquainted to statistical thinking by watching online videos for introductory probability and statistics as well as paying attention whenever arguments are backed up by empirical data.  |   |  |  |           |
| <b>Content and Educational Aims</b>   |   |  |  |           |
| <p>We live in a world full of data and more and more decisions are taken based on a comprehensive analysis of data. A central method of data analysis is the use of models describing the relationship between a set of predictor variables and a response. This module provides a thorough introduction to quantitative data analysis covering graphical representations, numerical summary statistics, correlation, and regression models. The module also introduces the fundamental concepts of statistical inference. Students learn about the different data types, how to best visualize them and how to draw conclusions from the graphical representations. Students will learn in this module the ideas and techniques of regression models within the generalized linear model framework involving multiple predictors and co-variates. Students will learn how to become an intelligent user of statistical techniques from a prosumers perspective in order to assess the quality of presented statistical results and to produce high quality analyses by themselves. By using illustrative examples from economics, engineering, the natural and social sciences students will gain the relevant background knowledge for their specific major as well as an interdisciplinary glimpse to other research fields. The general objective of the module is to enable students to become skilled statistical modelers who are well versed in the various assumptions, limitations, and controversies of statistical models and their application. Regular exercises and practical sessions will corroborate the students' proficiency with the statistical software R.</p> |   |  |  |           |

**Intended Learning Outcomes**

By the end of this module, students should be able to:

- apply basic techniques in statistical modeling and quantitative research methods
- describe fundamental statistical concepts, procedures, their assumptions and statistical fallacies
- explain the potential of using quantitative methods in all fields of applications;
- express informed skepticism to the limitations of statistical reasoning;
- interpret statistical modeling results in scientific publications;
- perform basic and intermediate-level statistical analyses of data, using R.

**Usability and Relationship to other Modules**

- The module is a mandatory / mandatory elective module of the Methods and Skills area that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules).
- Quantitative analytical skills are used and needed in many modules of all study programs.
- Pre-requisite for Econometrics.
- This module introduces to R in preparation for the 2<sup>nd</sup> year mandatory method module on econometrics and 3<sup>rd</sup> year GEM module on advanced econometrics; the statistics skills prepare students for all 2<sup>nd</sup> and 3<sup>rd</sup> year GEM modules and the thesis.
- Mandatory for a major in GEM and IEM.
- Mandatory elective for a major in IBA, IRPH, Psychologie and ISS
- Elective for all other study programs.

**Assessment**

Type: Written examination

Duration: 120 min

Weight: 100%

During the examination students use the software R as an auxiliary resource approved by the instructor of Records  
Scope: All intended learning outcomes of the module.

### 7.19.1.3 Qualitative Research Methods

|   |   |  |  |           |
|---|---|--|--|-----------|
| <b>Module Name</b>  |   | <b>Module Code</b>   | <b>Level (type)</b>  | <b>CP</b> |
| Qualitative Research Methods  |   | JTMS-MET-04  | Year 2<br>(Methods)  | 5         |
| <b>Module Components</b>  |   |  |  |           |
| <i>Number</i>   | <i>Name</i>   | <i>Type</i>  |  | <i>CP</i> |
| JTMS-04   | Qualitative Research Methods  | Lecture  |  | 5         |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  | <b>Mandatory Status</b>  |  |           |
| <b>Margrit Schreier</b>   | <ul style="list-style-type: none"> <li>Jacobs Track – Methods and Skills</li> </ul> | Mandatory for GEM, IBA, IRPH, Psychologie, ISS<br><br>Mandatory elective for EES |  |           |
| <b>Entry Requirements</b>   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i><br><br><input checked="" type="checkbox"/> None   |   | annually   | <ul style="list-style-type: none"> <li>In-class contact time (35 hours)</li> <li>Private Study (90 hours)</li> </ul> |           |
| <i>Co-requisites</i> <i>Knowledge, Abilities, or Skills</i><br><br><input checked="" type="checkbox"/> None                     |   | <b>Duration</b>  | <b>Workload</b>  |           |
|   |   | 1 semester   | 125 hours  |           |
| <b>Recommendations for Preparation</b>  |   |  |  |           |
| Patton, Michael Quinn (2015). <i>Qualitative evaluation and research methods</i> (4th ed.). Thousand Oaks etc.: Sage, chapter 2 |   |  |  |           |

**Content and Educational Aims**

Qualitative researchers explore the structure of everyday life and the meaning that events, other persons and their actions hold for us. To do so, they take an in-depth look at a few selected cases, such as organizations, campaigns, or people. We will look at the rationale and constructivist and interpretivist principles underlying qualitative research and from there move on to specific designs (such as grounded theory or ethnography), design principles (such as purposive strategies for selecting cases), and research methods. The focus of the module will be on learning about and trying out methods for collecting and analyzing qualitative data. Among methods for collecting qualitative data, relevant topics include semi-structured and narrative interviews, focus groups, observation, working with documents and with visuals. Methods for analyzing qualitative data include, for example, coding, qualitative content analysis, discourse analysis, visual analysis, semiotics or iconography.

The module has a strong hands-on component. It is held in part as a seminar and in part as a lab where students apply the methods to data from their own fields of study. During the lab sessions, students are required to participate in and report on activities involving the application and trying out of selected methods. For assessment and grading, students will carry out their own small research project where they bring to bear different methods on a topic of their choice.

**Intended Learning Outcomes**

By the end of this module, students should be able to:

- explain the principles underlying qualitative research;
- apply basic qualitative approaches and designs;
- identify and address ethical issues arising in qualitative research;
- apply strategies for purposefully selecting participants and cases;
- apply methods for collecting qualitative data;
- apply methods for analyzing qualitative data;
- Know what to look for in evaluating qualitative research.

**Usability and Relationship to other Modules**

- The module is a mandatory / mandatory elective module of the Methods and Skills area that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules).
- Complements Method and Skills module Data Collection and Empirical Research Methodologies.
- This module prepares students for the GEM and IBA 2<sup>nd</sup> year module on organization and HRM as well as Marketing, the GEM 3<sup>rd</sup> year module on public and nonprofit management, the IBA 3<sup>rd</sup> year module on Contemporary Topics in Marketing, and the thesis.
- Mandatory for a major in GEM, IBA IRPH, Psychologie, ISS.
- Mandatory elective for a major in EES.
- Elective for all other study programs.

**Assessment**

Type: Research project (including abstract, ethics statement, and lab report on methods implementation, findings, and evaluation)

Length: 5.000 words (for groups of 3 students)

Weight: 100%

Scope: All intended learning outcomes of the module.

### 7.19.1.4 Econometrics

|  |   |                    |   |           |
|--|---|--------------------|---|-----------|
| <b>Module Name</b>   |   | <b>Module Code</b> | <b>Level (type)</b>   | <b>CP</b> |
| Econometrics   |   | JTMS-MET-05        | Year 2<br>(Methods)   | 5         |
| <b>Module Components</b>   |   |                    |   |           |
| <i>Number</i>  | <i>Name</i>   |                    | <i>Type</i>   | <i>CP</i> |
| JTMS-05  | Econometrics  |                    | Seminar   | 5         |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>   |           |
| Prof. Dr. Colin Vance  | <ul style="list-style-type: none"> <li>Jacobs Track – Methods and Skills</li> </ul> |                    | Mandatory for GEM<br>Mandatory elective for IBA   |           |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>   |           |
| <i>Pre-requisites</i>  |   | annually           | <ul style="list-style-type: none"> <li>Seminar (35 hours)</li> <li>Private study (90 hours)</li> </ul>  |           |
| <input checked="" type="checkbox"/> Applied statistics with R  | <i>Co-requisites</i>  | <b>Duration</b>    | <b>Workload</b>   |           |
|  | <input checked="" type="checkbox"/> None  | 1 semester         | 125 hours   |           |
|  |   |                    | <ul style="list-style-type: none"> <li>Knowledge of the ordinary least squares regression model.</li> <li>Ability to estimate regression models using the R software.</li> <li>Skills in conducting statistical inference tests.</li> </ul> |           |
| <b>Recommendations for Preparation</b>   |   |                    |   |           |
| An accessible overview of regression analysis can be found in Sykes, A.O. (1993). An Introduction to Regression Analysis. Coase-Sandor Institute for Law & Economics, Univ. of Chicago Working Paper No. 20. <a href="https://chicagounbound.uchicago.edu/law_and_economics/51/">https://chicagounbound.uchicago.edu/law_and_economics/51/</a> . Students are also encouraged to read: Ziliak, Stephen T. (2008). Retrospectives: Guinnessometrics: The Economic Foundation of “Student’s” <i>t</i> . Journal of Economic Perspectives 22(4): 199-216. |   |                    |   |           |

**Content and Educational Aims**

This module focuses on the application of econometric methods to the analysis of secondary data. Specifically, the goal is to expose students to some of the issues and challenges typically confronted by econometricians when analyzing empirical data in the realms of social science research, business and finance. Emphasis will be placed on the intuition underlying various commonly applied econometric techniques and on the steps needed to implement them. The module expands on the knowledge acquired in statistics and intensify discussions of multiple regression analysis. The general objective is to become familiar with contemporary methods that are used in econometric and business analyses and to become a critical reader of case studies. In this regard, a clear distinction will be drawn along two dimensions: between questions of statistical significance versus those of economic or social significance; and between correlation and causation. The module takes a practical approach that covers how to estimate econometric models using the R software. Sessions will often include computer applications to foster understanding of the discussed topics.

**Intended Learning Outcomes**

By the end of this module, students should be able to:

- explain the mechanics and assumptions underpinning the Ordinary Least Squares (OLS) regression model;
- estimate an OLS model on secondary data using the R-software;
- interpret the coefficient estimates from an OLS model with respect to their sign and magnitude;
- conduct one- and two-sided tests of the statistical significance of the coefficients.

**Usability and Relationship to other Modules**

- The module is a mandatory / mandatory elective module of the Methods and Skills area that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules).
- This module builds on models and topics from the first-year modules “Microeconomics” and “Macroeconomics” and from the second-year modules “Environmental and Resource Economics” and “Development Economics”
- This module introduces to R in preparation for the 2<sup>nd</sup> year mandatory method module on econometrics and 3<sup>rd</sup> year GEM module on advanced econometrics; the statistics skills prepare students for all 2<sup>nd</sup> and 3<sup>rd</sup> year GEM modules and the thesis
- This module prepares students in IBA for the analysis of data in the 2<sup>nd</sup> year modules International Strategic Management and Marketing and the 3<sup>rd</sup> year module Contemporary Topics in Marketing and the thesis
- Mandatory for a major in GEM.
- Mandatory elective for a major in IBA
- Elective for all other study programs.

**Assessment**

Type: Written examination

Duration: 120 minutes

Weight: 100%

Scope: All intended learning outcomes of the module.

## 7.19.2 Big Questions Modules

### 7.19.2.1 Digitalization: Challenges and Opportunities for Business and Society

|   |  |   |  |                 |
|---|--|---|--|-----------------|
| <b>Module Name</b>  |  | <b>Module Code</b>  | <b>Level (type)</b>  | <b>CP</b>       |
| Big Questions: Digitalization: Challenges and Opportunities for Business and Society  |  | JTBQ-BQ-001   | Year 3 (Jacobs Track)  | 5               |
| <b>Module Components</b>  |  |   |  |                 |
| <i>Number</i>   |  | <i>Type</i>   |  | <i>CP</i>       |
| JTBQ-001  | <b>Digitalization: challenges and opportunities for business and society</b>   |   | Lecture/Projects   | 5               |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>   |   | <b>Mandatory Status</b>  |                 |
| <b>A. Wilhelm</b>   | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul> |   | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |                 |
| <b>Entry Requirements</b>   |  | <b>Frequency</b>  | <b>Forms of Learning and Teaching</b>  |                 |
| <i>Pre-requisites</i><br><input checked="" type="checkbox"/> None   |  | annually  | <ul style="list-style-type: none"> <li>17.5 h Lectures</li> <li>90 h Project work</li> <li>17.5 h Private Study</li> </ul>       |                 |
| <i>Co-requisites</i><br><input checked="" type="checkbox"/> None  |  | <i>Knowledge, Abilities, or Skills</i><br><ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> | <b>Duration</b>  | <b>Workload</b> |
|   |  | 1 semester  | 125 hours  |                 |
| <b>Recommendations for Preparation</b>  |  |   |  |                 |
| Critical following of media coverage on the module's topics in question.  |  |   |  |                 |
| <b>Content and Educational Aims</b>   |  |   |  |                 |
| All "Big Questions" (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden |  |   |  |                 |

the students' horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

Digitalization is currently one of the major change drivers in our globalized world affecting all aspects of our lives: from private aspects, such as the way we find and select friends and partners, to economic principles such as the replacement of human labor by robots and artificial intelligence. Big data is a further buzz word of the digitalization process: the massive storage and analysis of comprehensive information of customers and citizens instill both hopes and fears to the public. From a business perspective, digitalization is often portrayed as a sea of big opportunities while at the same time many companies are under pressure to comply and adapt to rapidly changing processes and business approaches. The public debate on digitalization, particularly on big data, is torn between the two poles portrayed by the writers George Orwell and Aldous Huxley: complete surveillance and oppression on the one end, irrelevance and narcissism on the other. The technological research quite naturally is mostly concerned with the technical feasibility of the approaches, the continuously increasing challenges with respect to the digitalization process, and the creative solutions needed to tackle them. In this module, you will get an overview on digitalization by looking at it from various aspects, primarily the business and societal point of view. There will be a fundamental exposition to the technological side of digitalization as far as it is needed for assessing the societal and business implications.

### ***Intended Learning Outcomes***

Students acquire transferable and key skills in this module.

By the end of this module, students will be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- summarize and evaluate the current debate about big data, the pros and cons, from both a business perspective as well as a societal perspective
- prioritize the major threats and opportunities of digitalization
- advance a knowledge-based opinion on how technological possibilities and innovations can drive business practices and initiate public discourse and debate
- complete a self-designed project, collect information, distill information and summarize in a suitable reporting format
- overcome general teamwork problems in order to perform well-organized project work

### ***Usability and Relationship to other Modules***

- The module is a mandatory elective module of the Big Questions area that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules).
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

### ***Assessment***

Type: Team project

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.19.2.2 Water: The Most Precious Substance on Earth

|  |  |   |   |           |
|--|--|---|---|-----------|
| <b>Module Name</b>   |  | <b>Module Code</b>  | <b>Level (type)</b>   | <b>CP</b> |
| Big Questions: Water: The Most Precious Substance on Earth               |  | JTBQ-BQ-002   | Year 3 (Jacobs Track)   | 5         |
| <b>Module Components</b>   |  |   |   |           |
| <b>Number</b>  | <b>Name</b>  | <b>Type</b>   |   | <b>CP</b> |
| JTBQ-002   | Water - The most precious substance on earth                                   | Lecture/Tutorial  |   | 5         |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>   | <b>Mandatory Status</b>   |   |           |
| M. Bau and D. Mosbach  | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul> | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul>  |   |           |
| <b>Entry Requirements</b>  |  | <b>Frequency</b>  | <b>Forms of Learning and Teaching</b>   |           |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> None    |  | annually  | <ul style="list-style-type: none"> <li>17.5 h Lectures</li> <li>90h Project work</li> <li>17.5 Private Study</li> </ul> |           |
| <b>Co-requisites</b><br><br><input checked="" type="checkbox"/> None     |  | <b>Duration</b><br><br>2 semesters  | <b>Workload</b><br><br>125 hours  |           |
|  |  | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> |   |           |
| <b>Recommendations for Preparation</b>                                   |  |   |   |           |
| Critical following of media coverage on the module's topics in question. |  |   |   |           |

**Content and Educational Aims**

All "Big Questions" (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students' horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

Water is the basic prerequisite for life on our planet, but has become a scarce resource and a valuable commodity; it is of fundamental importance for the world economy and for global food supply and a driving force behind geopolitical conflict. In this module, the profound impact of water on all aspects of human life will be addressed from very different perspectives: from the natural and environmental sciences and engineering, as well as from social and cultural sciences.

Following topical lectures in the Fall semester, students will work on projects on the occasion of World Water Day (March 22) in small teams comprised of students from various disciplines and with different cultural backgrounds. The teamwork will be accompanied by related tutorials.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, students will be able to

1. use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines
2. advance a knowledge-based opinion on the complex module topics: on the physico-chemical properties of water, its origin and history, on the importance of water as a resource, on physical and economic freshwater scarcity, on the risks of water pollution and the challenges faced by waste water treatment, on the concept of virtual water, on the bottled water industry and the cultural values and meanings of water.
3. formulate coherent written and oral contributions (e.g., to (panel) discussions) on the topic
4. perform well-operating teamwork
5. present a self-designed project in a university-wide context

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Written examination

Duration: 60 min

Weight: 50%

Scope: Intended learning outcomes (1-3)

Type: Team project

Weight: 50%

Scope: Intended learning outcomes (1-5)

### 7.19.2.3 Ethics in Science and Technology

|  |  |   |  |           |
|--|--|---|--|-----------|
| <b>Module Name</b>   |  | <b>Module Code</b>  | <b>Level (type)</b>  | <b>CP</b> |
| Big Questions: Ethics in Science and Technology  |  | JTBQ-BQ-003   | Year 3 (Jacobs Track)  | 5.0       |
| <b>Module Components</b>   |  |   |  |           |
| <b>Number</b>  | <b>Name</b>  | <b>Type</b>   |  | <b>CP</b> |
| JTBQ-003   | Ethics in Science and Technology   | Lecture /Projects   |  | 5.0       |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>   | <b>Mandatory Status</b>   |  |           |
| A. Lerchl  | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul> | <ul style="list-style-type: none"> <li>Mandatory for Chemistry</li> <li>Mandatory elective for all other undergraduate study programs except IEM</li> </ul> |  |           |
| <b>Entry Requirements</b>  |  | <b>Frequency</b>  | <b>Forms of Learning and Teaching</b>  |           |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> None  |  | annually  | <ul style="list-style-type: none"> <li>35 h Lectures (hours)</li> <li>55 h Project work</li> <li>35 h Private Study</li> </ul> |           |
| <b>Co-requisites</b><br><br><input checked="" type="checkbox"/> None   |  | <b>Duration</b>   | <b>Workload</b>  |           |
| <b>Knowledge, Abilities, or Skills</b> <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> |  | 1 semester  | 125 hours  |           |
| <b>Recommendations for Preparation</b>   |  |   |  |           |
| Critical following of media coverage of the scientific topics in question.   |  |   |  |           |

### ***Content and Educational Aims***

All "Big Questions" (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students' horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

Ethics is an often neglected, but essential part of science and technology. Our decisions about right and wrong influenced the way, how our inventions and developments change the world. A wide array of examples will be presented and discussed, e.g., foundation of ethics, individual vs. population ethics, artificial life, stem cells, animal rights, abortion, pre-implantation diagnostics, legal and illegal drugs, pharmaceutical industry, gene modification, clinical trials and research with test persons, weapons of mass destruction, data fabrication, and scientific fraud.

### ***Intended Learning Outcomes***

Students acquire transferable and key skills in this module.

By the end of this module, students will be able to

1. use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
2. summarize and explain ethical principles;
3. critically look at scientific results which seem to be too good to be true;
4. apply the ethical concepts to virtually all areas of science and technology;
5. discover the responsibilities of the society and the individual for ethical standards;
6. understand and judge the ethical dilemmas in many areas of the daily life;
7. discuss the ethics of gene modification at the level of cells and organisms;
8. reflect on and evaluate clinical trials in relation to the Helsinki Declaration;
9. distinguish and evaluate the ethical guidelines for studies with test persons;
10. complete a self-designed project;
11. overcome general teamwork problems ;
12. perform well-organized project work.

### ***Usability and Relationship to other Modules***

- The module is a mandatory elective module of the Big Questions area that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules).
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.
- Mandatory for a major in Chemistry

### ***Assessment***

Type: Written examination

Duration: 60 min  
Weight: 50%

Scope: Intended learning outcomes (1-9)

Type: team project

Weight: 50%

Scope: Intended learning outcomes (1, 3-12)

### 7.19.2.4 Global Health – Historical context and future challenges

|  |   |  |   |           |
|--|---|--|---|-----------|
| <b>Module Name</b>   |   | <b>Module Code</b>   | <b>Level (type)</b>   | <b>CP</b> |
| <b>Big Questions:</b> Global Health – Historical context and future challenges |   | JTBQ-BQ-004  | Year 3 (Jacobs Track)   | 5         |
| <b>Module Components</b>   |   |  |   |           |
| <i>Number</i>  | <i>Name</i>   | <i>Type</i>  |   | <i>CP</i> |
| JTBQ-004   | Global Health – Historical context and future challenges  | Lecture  |   | 5         |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  | <b>Mandatory Status</b>  |   |           |
| <b>A. M. Lisewski</b>  | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul>  | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |   |           |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>   |           |
| <i>Pre-requisites</i>  |   | annually   | <ul style="list-style-type: none"> <li>Lectures (35 hours)</li> <li>Private Study (90 hours)</li> </ul> |           |
| <input checked="" type="checkbox"/> None                                       | <i>Co-requisites</i>  |  |   |           |
|  | <i>Knowledge, Abilities, or Skills</i>  | <b>Duration</b>  | <b>Workload</b>   |           |
|  | <input checked="" type="checkbox"/> None  | 1 semester   | 125 hours   |           |
|  | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> |  |   |           |
| <b>Recommendations for Preparation</b>   |   |  |   |           |
| Critical following of the media coverage on the module's topics in question.   |   |  |   |           |

**Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

This module gives a historical, societal, technical, scientific and medical overview over the past and future milestones and challenges of global health. Particular focus is on future global health issues in a world that is interconnected both through mobility and through communication networks. Presented are the main milestones along the path to modern health systems, including the development of public hygiene, health monitoring and disease response, and health related breakthroughs in science, technology, and economy. Focus is given to children, maternal and adolescent health, as these are most critical to the well-being of next generations. The module also provides key concepts in global health, epidemiology and demographics such as the connection between a society’s economical level and its population’s health status, measures of health status, demographic and epidemiologic transitions, as well as modern issues such as the growing fragmentation (to a personal level) of disease conditions and the resulting emergence of personalized medicine. Finally, attention is also given to publicly less prominent global health issues, such as re-emergent diseases, neglected tropical diseases, and complex humanitarian crises.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, students will be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- explain the historical context of today’s global health surveillance and response systems and institutions.
- discuss and evaluate the imminent and future challenges of public hygiene and response to disease outbreaks in a global society network context.

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Written examination

Duration: 60 min.

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.19.2.5 Global Existential Risks

|  |  |  |   |           |
|--|--|--|---|-----------|
| <b>Module Name</b>   |  | <b>Module Code</b>   | <b>Level (type)</b>   | <b>CP</b> |
| Big Questions: Global Existential Risks  |  | JTBQ-BQ-005  | Year 3 (Jacobs Track)   | 2.5       |
| <b>Module Components</b>   |  |  |   |           |
| <b>Number</b>  | <b>Name</b>  | <b>Type</b>  |   | <b>CP</b> |
| JTBQ-005   | Global Existential Risks   | Lecture  |   | 2.5       |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>   | <b>Mandatory Status</b>  |   |           |
| M. A. Lisewski   | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul> | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |   |           |
| <b>Entry Requirements</b>  |  | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>   |           |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> None  |  | annually   | <ul style="list-style-type: none"> <li>Lectures (17.5 hours)</li> <li>Private Study (45 hours)</li> </ul> |           |
| <b>Co-requisites</b><br><br><input checked="" type="checkbox"/> None   |  | <b>Duration</b>  | <b>Workload</b>   |           |
| Knowledge, Abilities, or Skills<br><br><ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> |  | 1 semester   | 62.5 hours  |           |
| <b>Recommendations for Preparation</b>   |  |  |   |           |
| Critical following of media coverage on the module's topics in question.   |  |  |   |           |

**Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

The more we develop science and technology, the more we also learn about global catastrophic and, in the worst case, even absolutely existential dangers that put the entire human civilization at risk to total collapse and thus to an abrupt and irrevocable end. These doomsday risks therefore directly challenge humanity’s journey through time as an overall continuous and sustainable process that progressively leads to a more complex but still largely stable human society. The lecture presents the main known varieties of existential risks including, for example, astrophysical, planetary, biological, and technological events and critical transitions that have a capacity to severely damage or even to eradicate Earth-based human civilization as we know it. It further offers a description of their characteristic features, in comparison to more conventional risks such as natural disasters, and a classification of global existential risks based on parameters such as range, intensity, probability of occurrence and imminence. Finally, it reviews some hypothetical monitoring and early warning systems as well as analysis methods that could potentially be used in strategies, if not to eliminate, but at least to better understand and ideally to minimize imminent global existential risks. This interdisciplinary lecture will allow students to look across diverse subject fields.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, students will be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- explain the varieties of global existential risks;
- discuss approaches to minimize the risks;
- formulate coherent written and oral contributions on the topic.

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Written examination

Duration: 60 min.

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.19.2.6 Future - From Predictions and Visions to Preparations and Actions

|   |   |                    |  |           |
|---|---|--------------------|--|-----------|
| <b>Module Name</b>  |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Big Questions: Future: From Predictions and Visions to Preparations and Actions |   | JTBQ-BQ-006        | Year 3 (Jacobs Track)  | 2.5       |
| <b>Module Components</b>  |   |                    |  |           |
| <b>Number</b>   | <b>Name</b>   | <b>Type</b>        |  | <b>CP</b> |
| JTBQ-006  | Future: From Predictions and Visions to Preparations and Actions  | Lecture            |  | 2.5       |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |           |
| Joachim Vogt  | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul>  |                    | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |           |
| <b>Entry Requirements</b>   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> None           |   | annually           | <ul style="list-style-type: none"> <li>Lecture (17.5 hours)</li> <li>Private Study (45 hours)</li> </ul>                         |           |
| <b>Co-requisites</b>  | <b>Knowledge, Abilities, or Skills</b>  | <b>Duration</b>    | <b>Workload</b>  |           |
| <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> | 1 semester         | 62.5 hours   |           |
| <b>Recommendations for Preparation</b>  |   |                    |  |           |
| Critical following of the media coverage on the module's topics in question.    |   |                    |  |           |

**Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

This module addresses selected topics related to Future as a general concept in science, technology, culture, literature, ecology, economy, and consists of three parts. The first part (Future Continuous) discusses forecasting methodologies rooted in the idea that the key past and present processes are understood and continue to operate such that future developments can be predicted. General concepts covered in this context include determinism, uncertainty, evolution, and risk. Mathematical aspects of forecasting are also discussed. The second part (Future Perfect) deals with human visions of the Future as reflected in the arts and literature, ranging from ideas of utopian societies and technological optimism to dystopian visions in science fiction. The third part (Future Now) concentrates on important current developments such as trends in technology, scientific breakthroughs, the evolution of the Earth system and climate change, and concludes with chances and challenges for present and future generations.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, the student should be able to:

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines
- distinguish and qualify important approaches to forecasting and prediction
- summarize the history of utopias and dystopias, and ideas presented in classical science fiction
- characterize current developments in technology, ecology, society, and their implications for the future

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Written examination

Duration: 60 min

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.19.2.7 Climate Change

|  |   |                    |  |                 |
|--|---|--------------------|--|-----------------|
| <b>Module Name</b>   |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b>       |
| Big Questions: Climate Change  |   | JTBQ-BQ-007        | Year 3 (Jacobs Track)  | 2.5             |
| <b>Module Components</b>   |   |                    |  |                 |
| <b>Number</b>  | <b>Name</b>   | <b>Type</b>        |  | <b>CP</b>       |
| JTBQ-007   | Climate Change  | Lecture            |  | 2.5             |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |                 |
| L. Thomsen/<br>V.Unnithan  | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul>  |                    | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |                 |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |                 |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> None        |   | annually           | <ul style="list-style-type: none"> <li>Lecture (17.5 hours)</li> <li>Private Study (45 hours)</li> </ul>                         |                 |
| <b>Co-requisites</b>   | <b>Knowledge, Abilities, or Skills</b>  |                    | <b>Duration</b>  | <b>Workload</b> |
| <input checked="" type="checkbox"/> None                                     | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> |                    | 1 semester   | 62.5 hours      |
| <b>Recommendations for Preparation</b>                                       |   |                    |  |                 |
| Critical following of the media coverage on the module's topics in question. |   |                    |  |                 |

**Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

This module will give a brief introduction into the development of the atmosphere throughout Earth's history from the beginning of the geological record to modern times and will focus on geological, cosmogenic and anthropogenic changes. Several major events in the evolution of the Earth that had a major impact on climate will be discussed, such as the evolution of an oxic atmosphere and ocean, onset of early life, snowball Earth, and modern glaciation cycles. In the second part, the course will focus on human impact on present climate change and global warming. Causes and consequences including case studies and methods for studying climate change will be presented and possibilities of climate mitigation (geo-engineering) and adaptation of our society to climate change (such as coastal protection and adaption of agricultural practices to more arid and hot conditions) will be discussed.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, the students should be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- advance a knowledge-based opinion on the complex module topics: impacts of climate change on the natural environment over geological timescales and since the industrial revolution, the policy framework in which environmental decisions are made internationally;
- work effectively in a team environment and undertake data interpretation;
- discuss approaches to minimize habitat destruction.

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Written examination

Duration: 60 min.;

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.19.2.8 Extreme Natural Hazards, Disaster Risks and Societal Impact

|  |   |                    |  |           |
|--|---|--------------------|--|-----------|
| <b>Module Name</b>   |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Big Questions: Extreme Natural Hazards, Disaster Risks and Societal Impact   |   | JTBQ-BQ-008        | Year 3 (Jacobs Track)  | 2.5       |
| <b>Module Components</b>   |   |                    |  |           |
| <b>Number</b>  | <b>Name</b>   | <b>Type</b>        |  | <b>CP</b> |
| JTBQ-008   | Extreme Natural Hazards: Disaster Risks and Societal Impact   | Lecture            |  | 2.5       |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |           |
| L. Thomsen   | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul>  |                    | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |           |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> None        |   | annually           | <ul style="list-style-type: none"> <li>Lecture (17.5 hours)</li> <li>Private Study (45 hours)</li> </ul>                         |           |
| <b>Co-requisites</b>   | <b>Knowledge, Abilities, or Skills</b>  | <b>Duration</b>    | <b>Workload</b>  |           |
| <input checked="" type="checkbox"/> None                                     | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> | 1 semester         | 62.5 hours   |           |
| <b>Recommendations for Preparation</b>                                       |   |                    |  |           |
| Critical following of the media coverage on the module's topics in question. |   |                    |  |           |

**Content and Educational Aims**

All "Big Questions" (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students' horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

Extreme natural events, increasingly dominate our global headlines, and understanding their causes, risks, and impacts, as well as the costs of mitigation, is essential to managing hazard risk and saving lives. This module presents a unique, interdisciplinary approach to disaster risk research, combining natural science and social science methodologies. It presents the risks of global hazards such as volcanoes, earthquakes, landslides, hurricanes, precipitation floods and space weather, and provides real-world hazard case studies from Latin America, the Caribbean, Africa, the Middle East, Asia and the Pacific region.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, the student should be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- advance a knowledge-based opinion on the complex module topics: how earth processes affect and interact with our civilization, especially those that create hazards;
- distinguish the methods scientists use to predict and assess the risk of natural hazards,
- discuss the social implications and policy framework in which decisions are made to manage natural disasters,
- work effectively in a team environment.

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Written examination

Duration: 60 min.

Weight: 100%

Scope: All intended learning outcomes of the module

### 7.19.2.9 International Development Policy

|  |  |   |  |                 |
|--|--|---|--|-----------------|
| <b>Module Name</b>   |  | <b>Module Code</b>  | <b>Level (type)</b>  | <b>CP</b>       |
| Big Questions: International Development Policy                              |  | JTBQ-BQ-009   | Year 3 (Jacobs Track)  | 2.5             |
| <b>Module Components</b>   |  |   |  |                 |
| <i>Number</i>  | <i>Name</i>  | <i>Type</i>   |  | <i>CP</i>       |
| JTBQ-009   | International Development Policy   | Lecture   |  | 2.5             |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>   |   | <b>Mandatory Status</b>  |                 |
| C. Knoop   | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul> |   | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul>     |                 |
| <b>Entry Requirements</b>  |  | <b>Frequency</b>  | <b>Forms of Learning and Teaching</b>  |                 |
| <i>Pre-requisites</i><br><input checked="" type="checkbox"/> None            |  | annually  | <ul style="list-style-type: none"> <li>Lecture (17.5 hours)</li> <li>Oral Presentations</li> <li>Private Study (45 hours)</li> </ul> |                 |
| <i>Co-requisites</i><br><input checked="" type="checkbox"/> None             |  | <i>Knowledge, Abilities, or Skills</i><br><ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> | <b>Duration</b>  | <b>Workload</b> |
|  |  | 1 semester  | 62.5 hours   |                 |
| <b>Recommendations for Preparation</b>                                       |  |   |  |                 |
| Critical following of the media coverage on the module's topics in question. |  |   |  |                 |

**Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

We live in a world where still a large number of people live in absolute poverty and without access to basic needs and services, such as food, sanitation, health care, security and proper education. This module provides an introduction to basic elements of international development policy, with a focus on the relevant EU policies in this field and on the Sustainable Development Goals/SDGs of the United Nations. The students will learn about the tools applied in modern development policies but also about critical aspects of monitoring and evaluating the results of development policy. Module related oral presentations and debates will enhance the students’ learning experience.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, the student should be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- breakdown the complexity of modern development policy;
- identify, explain and evaluate the tools applied in development policy;
- formulate well-justified criticism of development policy;
- summarize and present a module related topic in an appropriate verbal and visual form.

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Presentation

Duration: 10 minutes per student

Weight: 100%

Scope: All intended learning outcomes of the module

7.19.2.10 **Global Challenges to International Peace and Security**

|  |   |  |  |           |
|--|---|--|--|-----------|
| <b>Module Name</b>   |   | <b>Module Code</b>   | <b>Level (type)</b>  | <b>CP</b> |
| Big Questions: Global Challenges to International Peace and Security         |   | JTBQ-BQ-010  | Year 3 (Jacobs Track)  | 5         |
| <b>Module Components</b>   |   |  |  |           |
| <i>Number</i>  | <i>Name</i>   | <i>Type</i>  | <i>CP</i>  |           |
| JTBQ-010   | <b>Global Challenges to International Peace and Security</b>  | Lecture  | 5  |           |
| <b>Module Coordinator</b>  | <b>Program Affiliation</b>  | <b>Mandatory Status</b>  |  |           |
| C. Knoop   | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul>  | <ul style="list-style-type: none"> <li>Mandatory elective for students of all undergraduate study programs except IEM</li> </ul> |  |           |
| <b>Entry Requirements</b>  |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <i>Pre-requisites</i><br><input checked="" type="checkbox"/> None            |   | annually   | <ul style="list-style-type: none"> <li>Lecture (35h)</li> <li>Private Study (90h)</li> </ul> |           |
| <i>Co-requisites</i>   | <i>Knowledge, Abilities, or Skills</i>  | <b>Duration</b>  | <b>Workload</b>  |           |
| <input checked="" type="checkbox"/> None                                     | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues of global relevance</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> | 1 semester   | 125 hours  |           |
| <b>Recommendations for Preparation</b>                                       |   |  |  |           |
| Critical following of the media coverage on the module's topics in question. |   |  |  |           |

**Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

We live in a multi-polar world where multiple crisis situations have rather become the rule than the exception. World peace and security are challenged by various developments and factors, such as the risk of proliferation of weapons of mass destruction, the spread of international terrorism, organized and cybercrime but also by the man-made and natural effects of climate changes and the growing gap between the few very rich and the many utterly poor people living on our planet. This module provides an introduction to some of the most important threat scenarios for global peace and security. The students will learn about the tools available to deal with these challenges with a focus on the European Union, the African Union and the United Nations. In this context, the concepts of multilateralism and bilateral efforts to achieve world peace and security will also be examined.

**Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, the student should be able to

- use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
- breakdown the complexity of global threats to peace and security;
- identify, explain and evaluate important tools available to international actors in the interest of world peace and security;
- formulate well-justified criticism of these tools and explain their limits;
- summarize and present a module related topic in an appropriate verbal and visual form ;

**Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

**Assessment**

Type: Presentation

Duration: 10 minutes

Weight: 100%

Scope: All intended learning outcomes of the module

7.19.2.11 Sustainable Value Creation with Biotechnology. From Science to Business

|   |   |                    |  |                 |
|---|---|--------------------|--|-----------------|
| <b>Module Name</b>  |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b>       |
| Sustainable Value Creation with Biotechnology. From Science to Business.  |   | JTBQ-BQ-011        | Year 3<br>(Jacobs Track)   | 2.5             |
| <b>Module Components</b>  |   |                    |  |                 |
| <b>Number</b>   | <b>Name</b>   | <b>Type</b>        |  | <b>CP</b>       |
| JTBQ-011  | Sustainable Value Creation with Biotechnology. From Science to Business   | Lecture - Tutorial |  | 2.5             |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |                 |
| Marcelo<br>Fernandez Lahore   | <ul style="list-style-type: none"> <li>Jacobs Track - Big Questions</li> </ul>  |                    | <ul style="list-style-type: none"> <li>Mandatory for Chemistry</li> <li>Mandatory elective for students of all undergraduate study except IEM</li> </ul> |                 |
| <b>Entry Requirements</b>   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |                 |
| <b>Pre-requisites</b><br><input checked="" type="checkbox"/> None   |   | annually           | <ul style="list-style-type: none"> <li>Lecture and Tutorial (17.5 hours)</li> <li>Private Study (45 hours)</li> </ul>                                    |                 |
| <b>Co-requisites</b>  | <b>Knowledge, Abilities, or Skills</b>  |                    | <b>Duration</b>  | <b>Workload</b> |
| <input checked="" type="checkbox"/> None  | <ul style="list-style-type: none"> <li>the ability and openness to engage in interdisciplinary issues on bio-based value creation</li> <li>media literacy, critical thinking and a proficient handling of data sources</li> </ul> |                    | 1 semester   | 62.5 hours      |
| <b>Recommendations for Preparation</b>  |   |                    |  |                 |
| <a href="https://www.ctsi.ucla.edu/researcher-resources/files/view/docs/EGBS4_Kolchinsky.pdf">https://www.ctsi.ucla.edu/researcher-resources/files/view/docs/EGBS4_Kolchinsky.pdf</a><br><a href="https://link.springer.com/article/10.1057/jcb.2008.27">https://link.springer.com/article/10.1057/jcb.2008.27</a><br><a href="https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf">https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf</a> |   |                    |  |                 |

### **Content and Educational Aims**

All “Big Questions” (BQ) modules deal with the economic, technological, societal and environmental contexts of the global issues and challenges of the coming decades. The BQ modules intend to raise awareness of those challenges and broaden the students’ horizon with applied problem solving beyond the borders of their own disciplines. Knowledge and skills offered in the interdisciplinary BQ modules support students in their development to become an informed and responsible citizen in a global society.

This module has a particular focus on the role that Biotechnology and Biorefining is expected to play in social, economic and environmental contexts.

To deliver such a vision the module will prepare students to extract value from Biotechnology and associated activities. This will be done in the form of business cases that will be systematically developed by students alongside the development of the course. In this way, students will develop entrepreneurial skills while understanding basic business-related activities that are not always present in a technical curriculum. Case development will also provide students with the possibility of understanding the social, economic, environmental impact that Biotechnology and Biorefining can deliver in a Bio-Based Economy. The knowledge and skills gained through this course are in direct and indirect support of the UN 2030 Agenda for Sustainable Development: “Transforming our World”.

### **Intended Learning Outcomes**

Students acquire transferable and key skills in this module.

By the end of this module, the students should be able to

1. design and develop a Business Case based on the tools provided by modern Biotechnology;
2. explain the interplay between Science, Technology and Economics / Finance;
3. use their disciplinary factual and methodological knowledge to reflect on interdisciplinary questions by comparing approaches from various disciplines;
4. work effectively in a team environment and undertake data interpretation and analysis;
5. discuss approaches to value creation in the context of Biotechnology and Sustainable Development;
6. explain the ethical implications of technological advance and implementation;
7. demonstrate presentation skills.

### **Usability and Relationship to other Modules**

- The module is a mandatory elective module of the Big Questions area, that is part of the Jacobs Track (Methods and Skills modules; Community Impact Project module; Language modules; Big Questions modules)
- Students are encouraged to relate the content of their previous modules to the topics of this module and contribute such knowledge and competences to class discussions and activities.

### **Assessment**

Type: Term Paper

Length: 1.500 – 3.000 words

Weight: 75%

Scope: Intended learning outcomes of the module (1-6)

Type: Presentation

Duration: 10-15 min.

Weight: 25%

Scope: Intended learning outcomes of the module (2-7)

### 7.19.3 Community Impact Project

|   |   |                    |  |           |
|---|---|--------------------|--|-----------|
| <b>Module Name</b>  |   | <b>Module Code</b> | <b>Level (type)</b>  | <b>CP</b> |
| Community Impact Project  |   | JTCI-CI-950        | Year 3 (Jacobs Track)  | 5         |
| <b>Module Components</b>  |   |                    |  |           |
| <b>Number</b>   | <b>Name</b>   | <b>Type</b>        |  | <b>CP</b> |
| JTCI-950  | Community Impact Project  | Project            |  | 5         |
| <b>Module Coordinator</b>   | <b>Program Affiliation</b>  |                    | <b>Mandatory Status</b>  |           |
| CIP Faculty Coordinator   | <ul style="list-style-type: none"> <li>Jacobs Track - Community Impact Project</li> </ul> |                    | Mandatory for all undergraduate study programs except IEM  |           |
| <b>Entry Requirements</b>   |   | <b>Frequency</b>   | <b>Forms of Learning and Teaching</b>  |           |
| <b>Pre-requisites</b><br><br><input checked="" type="checkbox"/> see below<br><br><b>Co-requisites</b><br><br><input checked="" type="checkbox"/> None  |   | annually           | <ul style="list-style-type: none"> <li>Introductory, accompanying and final events: 10 hours</li> <li>Self-organized teamwork and/or practical work in the community: 115 hours</li> </ul> |           |
| <b>Knowledge, Abilities, or Skills</b><br><br><ul style="list-style-type: none"> <li>Basic knowledge of the main concepts and methodological instruments of the respective disciplines</li> <li>xxxxx</li> </ul>  |   | <b>Duration</b>    | <b>Workload</b>  |           |
|   |   | 1 semester         | 125 hours  |           |
| <b>Recommendations for Preparation</b>  |   |                    |  |           |
| Develop or join a community impact project before the 5 <sup>th</sup> semester based on the introductory events during the 4 <sup>th</sup> semester, using the database of projects, communicating with fellow students and faculty and finding potential companies, organizations or communities to target.  |   |                    |  |           |
| <b>Content and Educational Aims</b>   |   |                    |  |           |
| <p>CIPs are self-organized, major related and problem centered applications of the students' acquired knowledge and skills. The activities will ideally be connected to their majors, so that they will challenge the students' sense of practical relevance and social responsibility within the field of their studies. Projects will tackle real issues in their direct and/or broader social environment. They ideally connect the campus community to other communities, companies, organizations in a mutually beneficial way.</p> <p>Students are encouraged to create their own projects and find partners (e.g. companies, schools, NGOs), but will get help by the CIP faculty coordinator team and faculty mentors in doing so. They can join and collaborate in interdisciplinary groups that attack a given issue from different disciplinary perspectives.</p> <p>Student activities are self-organized but can draw on support and guidance by faculty and the CIP faculty coordinator team.</p> |   |                    |  |           |

***Intended Learning Outcomes***

The Community Impact Project is designed to convey the required personal and social competencies to enable students to finish their studies at Jacobs as socially conscious and responsible graduates (Jacobs mission) and to convey social and personal competencies to the students, including a practical awareness for the societal context and relevance of their academic discipline:

- understand real life issues of communities, organizations and industries and relate them to concepts of the own discipline;
- enhance problem-solving skills and develop critical faculty, create solutions to problems and communicate them appropriately to their audience;
- apply media and communication skills in diverse and non-peer social contexts;
- develop awareness for the societal relevance of own scientific action and a sense of social;
- responsibility for the social surrounding;
- reflect own behaviour critically in relation to social expectations and consequences;
- ability to work in a team and deal with diversity, develop cooperation and conflict skills, strengthen empathy and ambiguity tolerance.

***Usability and Relationship to other Modules***

- Students who have accomplished their CIP (6th semester) are encouraged to support their fellow students during the development phase of the next generations' projects (4th semester).
- Mandatory for all undergraduate study programs except IEM.
- Study abroad students are allowed to substitute the module with 5 CP of Big Questions modules.

***Assessment***

Type: Project, not numerically graded (pass/fail)

Scope: All intended learning outcomes of the module

#### 7.19.4 Language Modules

The descriptions of the language modules are provided in a separate document, the “Language Module Handbook” that can be accessed from here: <https://www.jacobs-university.de/study/learning-languages>

## 8 Appendix

### 8.1 Intended Learning Outcomes-Assessment-Matrix

| Global Economics and Management BA   |  |  |  |  | Microeconomics | Macroeconomics | Introduction to International Business | Elective CHOICE | Introduction to Finance and Accounting | Development Economics | Environment and Resource Economics | Comparing Economic Systems | International Economics | Marketing | Organization and HR Management | Advanced Econometrics | Information Economics | Managing Public and Nonprofit Org. | Internship / Startup and CS | Bachelor Thesis and Seminar | JT Methods and Skills | JT Language Module | JT Community Impact Project | JT Big Questions |  |  |  |  |
|--|--|--|--|--|----------------|----------------|--|-----------------|--|-----------------------|------------------------------------|----------------------------|-------------------------|-----------|--------------------------------|-----------------------|-----------------------|------------------------------------|-----------------------------|-----------------------------|-----------------------|--------------------|-----------------------------|------------------|--|--|--|--|
| Semester   |  |  |  |  | 1              | 2              | 1                                      | 1-2             | 2                                      | 3                     | 4                                  | 3                          | 4                       | 3         | 4                              | 5-6                   | 5-6                   | 5-6                                | 4-5                         | 6                           | 1-4                   | 1-4                | 5                           | 5-6              |  |  |  |  |
| Mandatory/ optional  |  |  |  |  | m              | m              | m                                      | o               | m                                      | m                     | m                                  | m                          | m                       | m         | m                              | m                     | m                     | m                                  | m                           | m                           | m                     | m                  | m                           | m                |  |  |  |  |
| Credits  |  |  |  |  | 7.5            | 7.5            | 7.5                                    | 15              | 7.5                                    | 7.5                   | 7.5                                | 7.5                        | 7.5                     | 7.5       | 7.5                            | 5                     | 5                     | 5                                  | 15                          | 15                          | 20                    | 10                 | 5                           | 10               |  |  |  |  |
| Program Learning Outcomes  |  |  |  |  | Competencies*  |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
|  |  |  |  |  | A              | E              | P                                      | S               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Contrast the interests and activities of private business organizations, governments, international organizations, civil society associations and non-profit organizations               |  |  |  |  | x              | x              |  | x               | x                                      | x                     |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Evaluate economic, political and societal problems using economics and management theories and scientific reasoning  |  |  |  |  | x              |                |  | x               | x                                      |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Apply economic theories and analyses to issues of wide public and professional concern   |  |  |  |  | x              |                |  | x               | x                                      |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Apply organization and management theories to basic dimensions of the conduct of business  |  |  |  |  |                | x              |  |                 |  | x                     |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Articulate the relationships between business decisions, economic policies, and national and international public affairs  |  |  |  |  | x              |                |  | x               | x                                      | x                     |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Identify the appropriate approach to deal with business and institutional actors depending on their interests  |  |  |  |  |                | x              |  | x               |  |                       | x                                  |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Distinguish differences in national and regional perceptions of and approaches to economic reasoning   |  |  |  |  |                | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Apply social and intercultural competencies needed to take on responsibility in diverse, international teams with competing and overlapping interests                                    |  |  |  |  |                | x              | x                                      | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Outline and discuss their arguments and the ones of others using a combination of economic, organizational and institutional analyses  |  |  |  |  | x              | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Assess and interpret relevant information for policy analyses in selected topics of micro- and macroeconomics  |  |  |  |  | x              | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Describe the state of published knowledge in economics and management  |  |  |  |  | x              | x              |  | x               | x                                      | x                     |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Explain real-life situations and problems of organizations and industries combining key contemporary theories of economics and management with methods and insights of other disciplines |  |  |  |  |                | x              | x                                      | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Communicate economic and managerial analysis and solutions appropriately to their audience   |  |  |  |  | x              | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Investigate problems and undertake scientific or applied research projects   |  |  |  |  | x              | x              |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Draw scientifically-founded conclusions that consider social, professional, scientific and ethical insights  |  |  |  |  | x              | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| Engage ethically with academic, professional and wider communities and to actively contribute to a sustainable future, reflecting and respecting different views                         |  |  |  |  | x              | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| reflect on interdisciplinary questions by comparing approaches from various disciplines  |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| take responsibility for their own learning, personal and professional development and role in society, evaluating critical feedback and using self-analysis                              |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| <b>Assessment Type</b>   |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| oral examination   |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| written exam   |  |  |  |  | x              | x              |  | x               |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| project  |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| term paper   |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| lab report   |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| poster presentation  |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| presentation   |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |
| various  |  |  |  |  |                |                |  |                 |  |                       |                                    |                            |                         |           |                                |                       |                       |                                    |                             |                             |                       |                    |                             |                  |  |  |  |  |

\*Competencies: A-scientific/academic proficiency; E-competence for qualified employment; P-development of personality; S-competence for engagement in society