technische universität
dortmund

International Summer Program (ISP)

Track A: Engineering

Track B: German and European Studies

Track C: Business and Entrepreneurship

Course Catalog 2022

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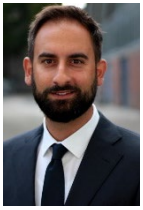

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Contents

German Language Course

(Compulsory class for all tracks)

Lecturers

tba

Time

Mondays, 10:00 – 13:00

Wednesdays,16:00 – 19:00

Location

tba

Course Description

For beginners of German we will offer the German A1.1 course. This class focuses on the introduction to the German language, simple oral and written communication, and basic German grammar. The following competences are imparted: Students who pass the course successfully will be able to provide information about themselves and their country of origin; to greet and to say goodbye; to talk about their family; to express their condition, preferences and resentments; to talk about their hobbies and leisure time; to make and understand time designations; to name prices and quantities; to name things of everyday life (groceries, furniture); to phrase simple questions; to talk about simple activities and events in the past tense.

The textbook ”Schritte plus: Deutsch als Fremdsprache” (1 through 6 according to the course level) will be used in class.

Credits

The German language course meets twice a week throughout the 7 weeks of the lecture period. This corresponds to 4.5 ECTS credit points or 3 credit hours.

Exam

There will be a final written or oral exam.

Germany – Politics, Culture and Society

(Compulsory Class for Tracks A&C, Elective Class for Track B)

Lecturers

Iris-Aya Laemmerhirt

Time

tba

Location

tba

Course Materials

Information regarding the organization of the course and course materials can be found in Moodle/Website:

tba

Aim of Lecture

The German culture course "Germany – Politics, Culture and Society" is designed to introduce students to Germany's cultural landscapes and political life. You will gain insights into your host country's past and present and will be encouraged to contribute your own first-hand experiences to class discussions.

Course Description

The compact seminar covers the following topics:

- General introduction to Germany
- Topic specific workshops on German politics (including short student presentations)
- German history before and after World War II, including reunification (the material includes nonfiction, historical texts and visual material)
- German literature (short overview and some examples)
- German culture (including German food culture, sports, music)
- Migration in Germany: introduction to the topic; discussion of migration including a contemporary German film on the topic
- The Ruhr Area (focus on this specific region, its history and culture)

This course is a mandatory seminar for students who take classes exclusively from Track A – Engineering. If you attend classes from Track B – German and European Studies, you may choose whether to take part in this course. You will meet on two separate days at the beginning and at the end of the program for one day of compact seminar each.

Requirements

Interest in Germany.

Credits

The course will be taught 2 hours/week over a partial semester. This corresponds to 1 hours/semester-week or 1.5 ECTS credits.

Part I:
Track A – Engineering

Chapter 1: Biochemical and Chemical Engineering

1.1. Dynamic Simulation

Lecturers

Prof. Dr.-Ing. Sebastian Engell

M.Sc. Jens Ehlhardt

M.Sc. Robin Semrau

Time

Mondays, 15:00 – 18:00

Location

tba

Aim of Lecture

The aim of the course is that the student obtains an understanding how dynamic process simulators work and is able to formulate, solve and analyze problems in advanced dynamic process simulators.

Lecture Content

The course dynamic simulation teaches the theoretical and practical use of advanced dynamic process simulators. The software used is gPROMS, a commercial equation-oriented modeling and optimization framework, which is widely used in the chemical industry. In order to teach the students the handling and implementation in gPROMS, the following topics are dealt with:

- Basics of numerical mathematics:
    - Types of dynamic systems
    - Numerical stability

  - Numerical solution of ODEs
- Basics of gPROMS
  - Implementation of basic models
  - Solving basic models in gPROMS
- Object oriented programming in gPROMS
  - Theory of object oriented programming
  - Realization in gPROMS
- Logical conditions and scheduling in gPROMS
- Numerical solutions of partial differential equations
  - Discretization methods
  - Initial and boundary conditions
- Implementation of partial differential equations in gPROMS
- Dynamic optimization
  - Basics of optimization theory
  - Solving of dynamic optimization problems
  - Dynamic optimization of chemical processes in gPROMS

Requirements

The students should be able to derive models of chemical processes and to understand given process models.

Credits

The course will be taught 3 hours/week over a partial semester. This corresponds to 1.5 hours/semester-week or 1.5 ECTS credits.

Exam

Written (computer-based) or oral exam.

Website

http://www.dyn.bci.tu-dortmund.de/cms/en/teaching/International-Summer-Program/dynamic-simulation/index.html

1.2. Logistics of Chemical Production Processes

Lecturers

Dr.-Ing. Christian Sonntag

M.Sc. Christian Klanke

Time

Thursdays, 14:15 – 15:45

Fridays, 8:00 – 9:30

Location

tba

Aim of Lecture

The students obtain an overview of supply chain management and planning, scheduling problems in the chemical industry, techniques and tools for modeling as well as simulation and optimization. These include discrete event simulation, equation-based modeling, mixed-integer linear programming, heuristic optimization methods as well as modeling and optimization using timed automata.

The students will be enabled to identify logistic problems, to select suitable tools and techniques for simulation and optimization as well as to apply them to real-world problems.

Lecture Content

1. Introduction to batch processes and supply chain management

2. Discrete event simulation: problem abstraction, classification, queuing policies, random number generation, probability distributions
3. Scheduling: Gantt charts, terminology and generic problem representation, machine environments, state task networks (STN), resource task networks (RTN), classification of batch scheduling problems, uniform discrete and non-uniform continuous time representation, campaign and moving horizon scheduling
4. Linear programming: properties of linear programs, graphical method, simplex method
5. Mixed Integer Linear Programming:
   Integer and binary variables, branch and bound algorithm, concept of relaxation, concept of convex hull, search algorithms
6. Modeling: modeling with binary variables, contingent decisions, big "M" constraints, case-study: production of expandable polystyrene (EPS)
7. Heuristic optimization: exact and heuristic optimization, heuristic algorithms, meta heuristic algorithms, classification of search techniques
8. Scheduling with timed automata: comparison of MI(N)LP and TA, TA modeling, semantics, reachability analysis, reduction techniques, reactive scheduling

Tutorial and Laboratory Contents

1. Paper-based supply chain management game Bullwhip effect, decisions with limited information
2. Discrete event simulation with INOSIM Professional (computer-based): recipe driven simulation of a paint factory
3. Production scheduling with Schedule Pro and Lekin (computer-based): dispatching rules, impact of
4. Sequence-dependent changeovers, campaign scheduling
5. Mixed Integer Linear Programming (paper-based): modeling and solution of MILPs, graphical solution, branch and bound algorithm
6. Modeling and Optimization with AIMMS (computer-based): building of graphical user interface, economic optimization of EPS production
7. Timed Automata Scheduling with TAOpt (computer-based)

Requirements

Higher mathematic course.

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 3 ECTS credits.

Exam

Written or oral final exam.

Recommended Reading

S. Engell: Logistic Optimization of Chemical Production Processes, Wiley-VCH 2008.

T.F. Edgar, D.M. Himmelblau, L.S. Lasdon: Optimization of Chemical Processes, McGraw Hill 2001.

Website

http://www.dyn.bci.tu-dortmund.de/cms/en/teaching/International-Summer-Program/logistics-of-chemical-production-processes/index.html

1.3. Bubbles and Drops in Chemical and Biochemical Processes

Lecturers

Prof. Dr.-Ing. Norbert Kockmann

M.Sc. Alexander Behr

Time

Wednesdays, 10:00 – 14:00

Location

tba

Aim of Lecture

Methods of generation, application and basics of discrete multiphase systems

Lecture Content

Basics and multiple methods of drops and bubbles formation in liquid/gas and liquid/liquid systems, atomization and gas dispersing systems, application of spray processes. Basics of forming, behavior and application of liquid films. Measurement methods to characterize these systems.

Requirements

Basic knowledge in Fluid Mechanics.

Tutorials

Calculation of typical applications in process engineering.

Laboratory

Demonstration of capillary flow and two phase columns.

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 3 ECTS credits.

Exam

Written or oral final exam.

Recommended Reading

All slides presented, will be given to attendants of the course together with recommendations of the literature.

Website

http://www.ad.bci.tu-dortmund.de/cms/en/teaching/lectures/bubbles_and_drops/index.html

1.4. Essentials of Micro Process Engineering

Lecturers

Prof. Dr.-Ing. Norbert Kockmann

M.Sc. Aljoscha Frede

Time

Thursdays, 12:00 – 16:00

Location

tba

Lecture Content

Micro-structured apparatuses allow intensified processes with excellent heat transfer, fast mixing and continuous process control. Applications in chemistry, analytics, process engineering and energy technology are covered. Special attention is given to single-phase and multi-phase flows, micromixers, mass and heat transfer, micro heat exchangers, microcontactors, chemical reactions, micro-reactors, continuous production processes and various applications. Manufacturing and design, application, laboratory and miniplant equipment, process intensification.

Requirements

Basic knowledge in Fluid Mechanics.

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 3 ECTS credits.

Exam

Written or oral final exam.

Recommended Reading

All slides presented, will be given to attendants of the course together with recommendations of the literature.

Website

http://www.ad.bci.tu-dortmund.de/cms/en/teaching/lectures/micro_process_eng/index.html

1.5. Fundamentals of Synthetic Biology – Genetic Circuit Design

Lecturers

Prof. Dr. Markus Nett

Time

Thursdays, 9:00 – 10:30

Location

tba

Lecture Content

Synthetic biology is a young scientific field that seeks to rationally engineer biological systems using approaches and methods common to well established engineering disciplines. In the last 15 years, researchers turned genes and other genetic elements into programmable parts with predictable functions. With these parts, it has become possible to create complex genetic systems that are capable of a wide range of tasks: from the production of sustainable food, fuel and therapeutic drugs to the development of medical diagnostics and treatment tools. This course introduces the basic concepts and techniques of synthetic biology.

Requirements

Basic knowledge of genetic and biotechnological engineering

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 3 ECTS credits.

Exam

Written

Chapter 2: Automation and Robotics

2.1. Single-Loop and Multi-Loop Controller Design

Lecturers

Prof. Dr.-Ing. Sebastian Engell

M.Sc. Yehia Abdelsalam

M.Sc. Afaq Ahmad

Time

Thursdays, 14:15 – 15:45

Fridays, 8:00 – 9:30

Location

tba

Lecture Content

- Specification of controller design tasks, design using frequency response approximation, performance limitations in SISO control loops
- I/O-system description of multivariable systems, poles, zeros, zero directions, stability criteria
- Classical Design Techniques:
  decoupling, sequential loop closure, approximate decoupling, multivariable frequency response approximation, robustness
- Control Structure Selection:
  Static and dynamic controllability analysis, plant directionality, relative gain array, computation of the attainable performance

Aim of Lecture

The students can design multivariable controllers for chemical and biochemical processes based on input-output descriptions. They are aware of the limitations of controller performance in the scalar and in the multivariable case and of the influence of plant-model mismatch on stability and controller performance. They can apply modern tools to the selection of control structures.

Requirements

Basic knowledge in single loop controller design for plants with linear dynamics. The concepts of transfer functions and frequency responses should be known.

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 2.5 ECTS credits.

Exam

Written or oral exam.

Website

http://www.dyn.bci.tu-dortmund.de/cms/en/teaching/biochemical-engineering/master-biw/Single-Loop-and-Multi-Loop-Controller-Design/index.html

2.2. Data-Based Dynamic Modeling

Lecturers

Prof. Dr.-Ing. Sebastian Engell

M.Sc. Pourya Azadi

M.Sc. Filippo Tamagnini

M.Sc. Joschka Winz

Time

Wednesdays, 8:30 – 10:00

Thursdays, 15:45 – 17:15

Location

tba

Aim of Lecture

- Concepts of models, which can be identified from data
- Judging the quality and the limitations of data-based models
- Theory and basic calculations of the z-transformation

The students can identify the dominant dynamics of a process from step responses and can apply modern methods and algorithms to identify the parameters of linear process models from measured data. The students know the concept of the z-transformation. They know the structure of nonlinear black box models and can judge the quality and the limitations of data-based models.

Requirements

The students should know basic concept of the Laplace-transformation and transfer functions.

Lecture Content

This lecture deals with different linear and non-linear black-box models.

The identification of the parameters of these models is the first topic, beginning with the identification of simple models from step responses. The goal here is to find a model of a system by looking at its step response. Stable or unstable systems, systems with over- and/or undershoot or oscillating systems can be modeled by simple transfer functions in the Laplace-domain. Methods like Kupfmüller or Schwarze can be applied to given step responses. The identifiability of poles and zeros of transfer functions also depends on their position in the complex plane.

The next types of models, which are covered in this lecture, are linear transfer functions in the (sampled) z-domain. An introduction to sampling and problems which arise from sampling are discussed (e.g. Shannon theorem). The z-transformation is introduced and calculation rules e.g. for inverse transformations are discussed and applied. The relation between transfer functions in the s- and z-domains (position of the poles, transformation) is discussed.

An important class of black-box models is described as prediction error methods. The theory behind ARX, ARMAX and OE models is explained in detail. Different methods for the numerical parameter estimation (linear and nonlinear numerical least squares estimation) are discussed. The capability of representing a systems

behavior by such models is highly dependent on the model order. Accuracy and overfitting are discussed.

The last part is about modeling using nonlinear black box models (perceptron neural nets, radial-basis-function nets). Concepts of training and the usage of neural networks as dynamic models are introduced. The quality of neural net models is discussed.

Tutorials

The lectures are supported by tutorials, in which the concepts are applied. Some of the tutorials are computer-based and are carried out in a computer lab. The tutorial contents are listed below:

- Step response identification (Methods of Kupfmüller, Strejc and Schwarze)
- Computer lab: step response identification (validation of graphical methods / Optimization-based step response identification (with MATLAB))
- Discrete-time systems / z-Transform
- Computer lab: ARX parameter estimation (with MATLAB)
- Computer lab: prediction error methods (with MATLAB)
- Non-linear black box modeling

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 2.5 ECTS credits.

Exam

The students are graded with an assignment (15%) and one written or oral exam (85%). The assignment is an application example, which has to be solved using a computer. The solution has to be described and submitted.

Website

http://www.dyn.bci.tu-dortmund.de/cms/en/teaching/International-Summer-Program/data-based-dynamic-modeling/index.html

2.3. Cyber-Physical System Fundamentals

Lecturers

Prof. Dr. Jian-Jia Chen

Dr. Ing. Kuan-Hsun Chen

Time

Lecture:	Fridays, 10:15 – 11:45
Tutorials:	Tuesdays, 10:00 – 11:00 OR
	Wednesdays, 10:00 – 11:00 OR
	Wednesdays, 11:00 – 12:00

Location

tba

Aim of Lecture

The aim of this course is to provide an overview over fundamental techniques of designing embedded systems (information processing systems embedded into products such as telecommunication systems, vehicles or robots). At the end of the course, the students will be able to put the different areas of embedded systems into perspective and to understand more specialized topics, such as timing predictability, modeling, scheduling, or performance evaluation.

Lecture Content

The compact seminar covers the following topics:

Introduction of Cyber-Physical Systems

- Motivation, application areas and challenges in design
- Specifications and modeling
- Models of computation (i.e. state charts, SDK, dataflow, petri nets, discrete event modeling)
- CPS-hardware: discretization, memory systems, sampling theory and signal converter
- System software: real-time operating systems, resource access protocols and middleware
- Evaluation and validation: multi-objective optimization, real-time calculus, dependability analysis
- Application mapping: scheduling, dependency and design space exploration

The course is organized as an inverted classroom. Students are asked to watch the lecture at home and do the theoretical exercises together with the lecturer in the classroom and the practical exercises in lab sessions. The practical exercises can be replaced by the virtual exercises if it is necessary. There will be lab assignments to let students get familiar with the modeling tools, embedded hardware platforms.

The course on cyber-physical systems fundamentals can be seen on youtube as well:

http://www.youtube.com/user/cyphysystems

Requirements

Basic education in computer science or computer engineering; we assume that students are familiar with at least one programming language (preferably C/C++ or Java) and do understand computer structures (at the level of Hennessy/Patterson: Computer Structures), finite state machines, NP completeness, simple electronic circuits and systems of linear equations. Typically, we expect students to be third year undergraduates or graduate students. EE or ME students should study the above subjects before attending the course.

Tutorials

1.5 hrs per week. The content of laboratory can be itemized as follows:

- StateChart Tutorial and Models of Computation (3 weeks)
- WCET analysis: Tools and ILP (2 weeks)
- Robotic Application and OSEK Standard on LEGO EV3 (3 weeks)

Credits

The lecture/tutorial will be taught 4 hours/ semester-week over a partial semester (+1.5 hours laboratory) which corresponds to 6 ECTS credits.

Exam

To participate in the exam, the students have to pass at least 50% of total points in each lab session.

Recommended Reading

Peter Marwedel: Embedded System Design, Springer, 2005.

Chapter 3: Applied Mathematics

3.1. Intensive Course in Statistics

Lecturers

Prof. Dr. Markus Pauly

Dr. Marc Ditzhaus

Time

Lecture:	Wednesdays & Thursdays: 12:00 – 14:00
Tutorial:	Wednesdays: 10:00 – 12:00

Location

tba

Aim of Lecture

The course gives an introduction to statistical concepts that are useful for research projects in various fields of application and areas of science.

Lecture Content

The lecture is largely based on the book “Montgomery, D.C. and Runger, G.C. (2007): Applied Statistics and Probability for Engineers, 4th ed., Wiley, New York”.

Table of contents:

Requirements

Except for basic mathematical calculus no prior knowledge is necessary.

Tutorials and Laboratory

The tutorial will be used to practice the course material by solving statistical problems and to further discuss student questions. The statistical computer package R will be introduced for statistical programming and used by the students to analyze small data sets. This includes theoretical tutorials and software labs.

Exam

Written or oral exam.

Credits

The lecture/tutorial will be taught 3 hours/semester-week which corresponds to 5 ECTS credits.

Recommended Reading

Basics of Probability and Statistics:

- Bain, L.J., Engelhardt, M. (1992): Introduction to Probability and Statistics, Duxbury Press, Pacific Grove.
- Montgomery, D.C. and Runger, G.C. (2007): Applied Statistics and Probability for Engineers, 4th ed., Wiley, New York.
- Fahrmeir, Künstler, Pigeot, and Tutz (2007) Statistik (6th ed.) (in German).

Basics of R:

- Dalgaard, P. (2008): Introductory Statistics with R, 2nd ed., Springer, New York.
- Venables, W.N. and Ripley, B.D. (2002): Modern Applied Statistics with S, 4th ed., Springer, New York.

Chapter 4: Computer Science

4.1. Architecture & Implementation of DBMS

Lecturers

Prof. Dr. Jens Teubner

Roland Kühn

Time

Lectures:	Mondays, 8:00 – 10:00 Wednesdays, 10:00 – 12:00
Tutorials:	Mondays, 10:00 – 12:00 OR Wednesdays, 12:00 – 14:00

Location

tba

Course Description

Database systems form the heart of virtually any enterprise application. They manage vast amounts of data, yet allow for fast and efficient search; they handle thousands of updates every second, yet will not trip over problems due to concurrency; and guarantee consistency and data integrity even in the case of catastrophic events (loss of hardware, etc.).

In this course we learn how database systems can provide this service and performance. We will look “under the hoods” and understand how a database is built internally. We will get to see techniques that allow to construct a system in a scalable and robust manner.

ISP students will attend the second part of the course, in which we will discuss transaction management (concurrency control, two-phase locking); failure tolerance (recovery, ARIES); distributed data management; and database support for special applications (analytics, text search).

Credits

The course will be taught 6 hours/week over a partial semester. This corresponds to 3 hours/semester-week or 4 ECTS credits.

Exam

Written or oral exam.

Part II:
Track B – German & European Studies

Chapter 5: Courses for German & European Studies

5.1. The Union at Risk: History and the Future of the European Union

Lecturers

Jan Hildenhagen

Time

Mondays, 16:00 – 19:15

Location

tba

Course Description

Ever since of the so-called “economic and financial crisis” that started in 2008, the European Union seems at risk, in particular after the so-called “migration-crisis” in 2015 and the (since 2016) announced BREXIT. Using journalistic and scientific articles, students will enter into a dialogue with the instructor and each other regarding the history and the future development of the EU. Discussing various opinions and potential alternate models, the students will get a better understanding of the European Union in the context of “European identity”.

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.

5.2. "I get the urge for going" Transatlantic Modes of Mobility & their Cultural Significance

Lecturers

Bernd Eßmann

Time

Thursdays, 10:15 – 13:45

Location

tba

Course Description

The aim of this course is to look at the impact mobility has on our everyday lives. Some of the questions that we will deal with are: In what way do we perceive society differently from a mobile perspective? Do different cultures have different habitual patterns with regard to mobility? What difference does it make whether you travel individually, for instance in a car, or if you share your mode of transportation, say, on a train?

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.

5.3. "At the Pond": Environmental Imaginaries

Lecturers

Julia Sattler

Time

Tuesdays, 8:30 – 11:45

Location

tba

Course Description

The idea of the environmental imaginary presupposes a close relationship between writing and one's surroundings. It suggests, for example, that a text's setting – its nonhuman environment – is not simply a framing device, but rather, that the relationship between the characters and their surroundings is important to understand a text's broader ethics. Starting from such an understanding, in this class, we will focus on American literature and culture since the Romantic period. In our readings, and in tune with ongoing discussions in ecocriticism, "nature" or "the environment" will however not be limited to the idea of an untouched wilderness, but we will also include, for example, debates about the redemptive reuse of formerly industrial spaces and the interconnectedness of social precarity and environmental (in-)justice.

Recommended Reading

Readings will include Henry David Thoreau, Mary Oliver, Joy Harjo, Juliana Spahr, and others. A reader will be made available before the start of the seminar. Please purchase the novel *American Rust* (2009) by Philipp Meyer.

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.

5.4. What is "German"? German History and Identity Formation

Lecturers

Jan Hildenhagen

Time

Fridays, 12:00 – 15:15

Location

tba

Course Description

Germany is a perfect example of how the political construction of nations (imagined communities) and borders shape societies and influence them; for example through a culture of remembrance. Using journalistic and scientific articles, students will enter into a dialogue with the instructor and each other regarding the history of the "Germans". Discussing various moments of German history the students will get a better understanding of the alleged "German identity". Mandatory Reading includes: MacGregor, Neil: Germany: Memories of a Nation, Penguin 2016.

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.

5.5. Horror Noir: A Transnational History of Blackness in Horror Cinema

Lecturers

Sandra Danneil

Time

Wednesdays, 8:30 – 11:45

Location

tba

Course Description

"Could horror create a Black monster without indicting the entire race as monstrous?" This question, asked in Robin R. Means Coleman's book Horror Noire (2011), is one of the central issues the seminar will be exploring by looking at the past and the present of Blackness in horror cinema from a transnational perspective. Although recent studies brought to light that African Americans make up a larger percentage of horror filmgoers than white folks, Blackness has been operating as an underrepresented feature of the horror genre for decades. Jordan Peele's smash hit Get Out (2017) has shown that there is a gap to be closed when it comes to horror storytelling about the Black experience or producing horror films that focus on a Black protagonist. Whether our journey encompasses "Blacks in horror" or "Black horror", the seminar's prime concern is to trace both categories, beginning with the earliest talkie horror and its "minstrel" characters, continuing with the evils of Voodoo as in White Zombie (1932) to Blaxploitation and its comic relief as in Blacula (1974) to more serious attempts that feature themes of empowerment and racism through a Black cast as The Girl With All The Gifts (2016), The Transfiguration (2016), or His House (2020) have presented in recent years.

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.

Part III:
Track C –
Entrepreneurship

Chapter 6: Business and Entrepreneurship

6.1. Concepts and Cases in International Marketing

Lecturers

Prof. Dr. Hartmut H. Holzmüller

Dr. Sarah Köcher

Time

tba

Location

tba

Aim of Lecture

This course provides an introduction into issues and problems commonly encountered in strategy formation and decision making by companies operating on an international scale. Students of the course shall

(1) become more sensitive to international marketing issues and develop an understanding of current problems that international marketers face on global markets
(2) develop a knowledge of concepts and methods used in international marketing theory and business practice
(3) be capable of applying the presented framework, concepts and methods, to typical issues in international marketing management

Cases will help you to develop strategic thinking in an international marketing context and will provide you with an opportunity to sharpen your verbal and written communication skills. Utilizing a teaching approach that mixes cases, class discussions, group workshops, you will learn key concepts and tools used in solving international marketing problems.

Requirements

Basic knowledge in marketing.

Credits

The course will be taught 8 hours/week over a partial semester. This corresponds to 4 hours/semester-week or 7.5 ECTS credits.

Exam

Choice between

a) written and graded exam covering the entire class (both Concepts and Cases, 90 minutes)
b) Case Studies (1/3) + written and graded exam on Concepts (60 minutes, 2/3) (mode will be announced in time)

Recommended Reading

- Keegan, W. J., & Green, M. C. (2015). Global marketing. Upper Saddle River, NJ: Pearson. (available as e-book at Dortmund University library)
- A reading pack with cases and background notes will be available at the Department of Marketing

Website

https://www.wiwi2.tu-dortmund.de/wiwi/m/de/lehre/veranstalt/sose_21/Concepts_and_Cases/index.html

6.2. International Business (Bachelor)

Lecturers

Prof. Dr. Steffen Strese

Time

tba

Location

tba

Aim of Lecture

This course discusses strategy development while focusing on external environmental influences as well as national culture. Based on that, possible growth strategies for multinational enterprises are introduced. Within those growth strategies the lecture elaborates on innovations as basic success drivers. Moreover, it is discussed how to handle innovative-driven growth in different countries.

Competencies

By participating in this course students become familiar with basic instruments and tools of strategic management. By including cases, the tutorial helps students to apply those instruments and tools in practice.

Requirements

Since you have to decide on an examination variant right at the beginning, it is absolutely necessary that you attend the first session.

Credits

The course will be taught 8 hours/week over a partial semester. This corresponds to 4 hours/semester-week or 7.5 ECTS credits.

Exam

Students can choose between two types of examination:

(1) 100% of total course points in exam (90 minute-exam)
(2) 60% of total course points in exam (60 minute-exam), 40% of total course points in student presentation

Website

https://im.wiwi.tu-dortmund.de/en/teaching/summer-term/course-2-2/

6.3. Business Model Innovation

Lecturers

Prof. Dr. Tessa Flatten
Wiss. Mit. Selina Wilke

Time

3 blocked days (tba)

Location

tba

Course Content

In the bachelor seminar Business Model Innovation students get to know the process of business development. In addition to the theoretical teaching of tools for the identification of business ideas, the focus is on practical application. Students develop their own business ideas in teams using the Business Model Canvas and present their results in a final presentation designed to convince potential investors of your idea.

Website

https://tm.wiwi.tu-dortmund.de/en/teaching/summer-term/ba-seminar/

Credits

The course will be taught 4 hours/week over a partial semester. This corresponds to 2 hours/semester-week or 5 ECTS credits

6.4. Foundations of Entrepreneurship

Lecturers

Prof.Dr. Andreas Liening

Time

3 block days (tba)

Location

tba

Course Content

Students receive an introduction to the relevant aspects of entrepreneurship. In addition to definitions and characteristics, an introduction to basic theories, concepts and processes of entrepreneurship is given. In particular, this includes concepts such as entrepreneurial attitude, entrepreneurial action, as well as the emergence and exploitation of opportunities. Furthermore, the process of (New) Venture Creation is in focus by deepening essential challenges regarding business model development. Here the decision-making process from the perspective of the start-up is also in the foreground. Furthermore, the societal aspects of entrepreneurship will be examined against the background of the challenges of economic and social development. This also includes the Addressing facets of the so- called 'dark side' of entrepreneurship. In the exercise the listed topics will be taken up by lectures from practice and should thus be reflected upon by the students.

Competencies

Students who successfully complete the module

- Know aspects of entrepreneurship and are familiar with opportunity types,
- Know the entrepreneurial process and can transfer it to practice
- Are able to analyze and develop business models independently
- Can differentiate between effectual and causal behaviour
- Are in a position to reflect entrepreneurship against the background of society as a whole

Credits

The course will be taught 8 hours/week over a partial semester. This corresponds to 4 hours/semester-week or 7.5 ECTS credits.