International Summer Program (ISP)

Track A: Engineering

Track B: German and European Studies

Track C: Entrepreneurship
Your contacts for academic questions in the field of Engineering (Track A) are:

M. Sc. Stefanie Gerlich,
Faculty of Biochemical- and Chemical Engineering
Phone 0049 – (0)231 755-7378
stefanie.gerlich@tu-dortmund.de

M. Sc. Maximilian Cegla
Faculty of Biochemical- and Chemical Engineering
Phone 0049 – (0)231 755-5171
maximilian.cegla@tu-dortmund.de

Your contact for academic questions in the field of German and European studies (Track B) is:

Mag. Hanna Rückl,
Faculty of Culture Studies
Phone 0049 – (0)231 755-7157
hanna.ruell@tu-dortmund.de

Your contact for academic questions in the field of Entrepreneurship (Track C) is:

Anh Dinh,
Faculty of Business and Economics
Phone 0049 – (0)231 755-3463
Anh.Dinh@tu-dortmund.de
Your contact for organizational questions is:

Lea Thomas, International Office
Emil-Figge-Straße 61 (2 floor, room 207a)
Phone 0049 – (0)231 755-6351
summerprogram@tu-dortmund.de
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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.

For intermediate students of German we will offer more advanced courses on the levels required.
German Language Course

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 exam.
Germany – Politics, Culture and Society

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

Lecturer

Iris-Aya Laemmerhirt

Time

tba

Location

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.

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)
Germany – Politics, Culture and Society

- 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 compact seminar will be taught on two separate days, corresponding to 1.5 ECTS credit points or 1 credit hour.
Part I:
Track A - Engineering
Chapter 1: Biochemical and Chemical Engineering
1.1. Dynamic Simulation

Lecturers:

Prof. Dr.-Ing. Sebastian Engell

Time

Mondays, 15:00 – 18:00

Location

tba

Aim of the lecture

The goal 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 modelling 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 mathematic:
  - Types of dynamics systems
  - Numerical stability
  - Numerical solution of ODEs
Chapter 1:

Biochemical and Chemical Engineering

- 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.
Chapter 1:

Biochemical and Chemical Engineering

Exam

Written (computer-based) exam.

Website

1.2. Logistics of Chemical Production Processes

Lecturers
Dr.-Ing. Christian Sonntag

Time
Thursdays, 14:15 – 15:45
Fridays, 08:00 – 09:30

Location
tba

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

The students will be enabled to identify logistic problems, to select suitable tools and techniques for simulation and optimization and to apply them to real-world problems.
Chapter 1:
Biochemical and Chemical Engineering

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 EPS (expandable polystyrene)
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
Chapter 1:

Biochemical and Chemical Engineering

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 sequence-dependent changeovers, campaign scheduling
4. Mixed Integer Linear Programming (paper-based):
   modeling and solution of MILPs, graphical solution, branch and bound algorithm
5. Modeling and Optimization with AIMMS (computer-based):
   Building of graphical user interface, economic optimization of EPS production
6. 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 final exam.
Chapter 1:
Biochemical and Chemical Engineering

Recommended Reading


Website
Chapter 1:

Biochemical and Chemical Engineering

1.3. Bubbles and drops in chemical and biochemical processes

Lecturer

Prof. Dr.-Ing. Norbert Kockmann

Time

Wednesdays, 10:00 – 14:00

Location

tba

Aim of lecture

Methods of generation, application and basics of discrete multiphase systems

Lecture Content


Requirements

Basic knowledge in Fluid Mechanics
Chapter 1:
Biochemical and Chemical Engineering

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 final exam.

Recommended Reading
All slides presented will be given to attendants of the course together with recommendations of the literature
1.4. Introduction to Programming with MATLAB

Lecturer
Prof. Dr.-Ing. Sebastian Engell

Time
tba

Location
tba

Aim of lecture
This lecture is thought as an introduction to programming in MATLAB. It should introduce into basic concepts of programming and give an overview over the most important elements of MATLAB. The aim of the course is to enable the participates to use the MATLAB programming language to write small applications for processing data and give a slight introduction into using MATLAB to solve small optimization problems.

Lecture Content
The contents of the lectures are:

1. Introduction to basic concepts of programming
2. Using MATLAB as a calculator
3. Basic data-structures
4. Conditional execution and loops
5. Advanced data-structures
6. Reading data and graphical output
7. Using numerical methods with MATLAB
Chapter 1: Biochemical and Chemical Engineering

Requirements
None

Tutorials
In the tutorials the students will get the opportunity to use MATLAB to solve tasks by themselves, which is an important part to learn programming. Therefore the participation in the tutorials is mandatory.

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 exam (60 minutes).

Website
1.5. Fundamentals of Synthetic Biology - Genetic Circuit Design

Lecturer

Prof. Dr. Markus Nett

Time

tba

Location

tba

Lecture Content

Synthetic biology is a relatively 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.
Chapter 1: Biochemical and Chemical 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 exam.

Recommended Reading
The recommended literature will be announced during the lecture.
Chapter 2: Automation and Robotics

Chapter 2: Automation and Robotics
2.1. Single-loop and multi-loop controller design

Lecturer

Prof. Dr.-Ing. Sebastian Engell

Time

Thursdays, 14:15 – 15:45
Fridays, 08:00 – 09:30
Starting on June 4th, 2020

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.
Chapter 2:
Automation and Robotics

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
2.2. Process Optimization

Lecturer
Prof. Dr.-Ing. Sebastian Engell

Time
tba

Location
tba

Aim of lecture
At the end of the lecture the students are capable to solve different (industrially relevant) types of optimization problems.

Requirements
Basic Mathematics (linear algebra, functional analysis), basic knowledge of differential equations, and basic knowledge of MATLAB.

Lecture Content
- Introduction to mathematical optimization, types of optimization problems, basics of convex analysis
- Scalar optimization problems: Definition and properties, optimality conditions, solution methods (interval bracketing, golden-section method, steepest-descent method, secant method, Newton method), convergence, applications
Chapter 2:

Automation and Robotics

- Multidimensional optimization problems: Definition and properties, optimality conditions, solution methods (simplex method, Nelder-Mead method, steepest-descent method, quasi-Newton methods, Newton method, conjugate gradient method), line search, convergence, applications
- Metaheuristics search: Definition and properties, solution methods (simulated annealing, tabu search, evolutionary algorithms, applications
- Constrained optimization problems: Definition and properties, convexity, optimality conditions, KKT conditions, duality principle, solution methods (Newton method, generalized reduced gradient method, active set method, interior-point methods, sequential quadratic programming), sensitivity analysis, applications
- Linear programming: Definition and properties, applications, optimality conditions, duality principle, solution methods (Dantzig’s simplex algorithm, interior-point methods)
- Quadratic programming: Applications, optimality conditions, solution methods, Introduction to Linear Model Predictive Control
- Dynamic optimization problems: Definition and properties, solution methods (sequential, simultaneous and multiple shooting techniques), applications, extensions to Nonlinear Model Predictive Control
Chapter 2:

Automation and Robotics

Tutorials

Applications of the methods presented in the lectures are realized on exemplary case studies related to processing industries and other engineering domains in the computer-based tutorial sessions using MATLAB.

There will be two optional computer-based tutorials. Attendance in these tutorials is not mandatory, but strongly recommended and will be awarded with extra credits (if the course is completed successfully).

Credits

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

4 ECTS credits will be given if the two optional computer-based tutorials are attended.

Exam

Written, closed book.

Recommended Reading

Slides presented at the lecture will be handed out to attendants of the course. The course covers selected topics from the following standard textbooks:

Chapter 2:

Automation and Robotics

Website

Chapter 2:
Automation and Robotics

2.3. Data-based Dynamic Modeling

Lecturers

Prof. Dr.-Ing. Sebastian Engell

Time

Wednesdays, 08:30 – 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.
Chapter 2:

Automation and Robotics

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 is 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
Chapter 2: Automation and Robotics

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 modelling

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 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

2.4. Cyber-Physical System Fundamentals

Lecturers
Prof. Dr. Jian-Jia Chen
Dr. Ing. Kuan-Hsun Chen

Time
tba

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 student 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),
Chapter 2: Automation and Robotics

- 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. 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.
Chapter 2: Automation and Robotics

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

- StateChart Tutorial on IAR development board (3 weeks)
- VHDL-simulations: Syntax and Semantics (2 weeks)
- Robotic Application on LEGO Mindstorms (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. In 2019, there will be an oral exam for ISP students.

Recommended Reading

Website
Chapter 3: Applied Mathematics
3.1. Intensive Course in Statistics

Lecturers
  tba

Time
  Tba

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
## Chapter 3:

### Applied Mathematics

Table of contents:

1. Introduction (random experiments, random variables, sample space)
2. Empirical distributions and exploratory data analysis (frequency tables, bar charts, histograms, distribution characteristics)
3. Probability theory (probability, conditional probability, independence, total probability, Bayes rule)
4. Random variables and their distribution (discrete distributions (Uniform, Bernoulli, Binomial, Hypergeometric, Poisson), continuous distributions (Uniform, Normal), expectation and variance, sampling distribution theory, joint distributions, covariance and correlation)
5. Estimation and confidence intervals (properties of estimators, Maximum Likelihood estimator, confidence intervals)
6. Hypothesis testing (Test of statistical hypotheses (Binomial test, Gaussian test, t-test, approximate tests), power, p-value)
7. Regression (simple / multiple regression, tests concerning regression)
8. Time series analysis (descriptive time series analysis (moving average, differencing), stationarity)

### 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 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:**


**Basics of R:**

Chapter 3:

Applied Mathematics

Website

https://www.statistik.tu-dortmund.de/2677.html
Chapter 4: Computer Science
Chapter 4:
Computer Science

4.1. Architecture & Implementation of DBMS

Lecturer
Prof. Dr. Jens Teubner

Time
tba

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 won't 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).
Chapter 4:

Computer Science

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.

Website

Part II:
Track B – German & European Studies
Chapter 5: Courses for German & European Studies
5.1. What is “German”? German History and Identity Formation

Lecturer
Jan Hildenhagen

Time
Tuesdays, 16:00 – 19:15

Location
EF50 – Room 0.406 (Building 8)

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 academic 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.”

Credits
The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.
Chapter 5:
Courses for German & European Studies

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

Lecturer
Jan Hildenhagen

Time
Fridays, 12:00 – 15:15

Location
EF50 – Room 0.406 (Building 8)

Course Description
In the course 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 academic 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.
5.3. The Democratic Canaan: Transnational Images of the United States in Charles Sealsfield's Fiction

Lecturer
Walter Grünzweig

Time
Mondays, 16:00 – 19:30

Location
EF50 – Room 0.420 (Building 8)

Course Description
Charles Sealsfield (1793-1864) was a German-American author, who wrote in English and German. His non-fiction and fiction present 19th century U.S. society and culture in all its diversity, represented in colorful narratives. It highlights the exceptionalist position of the country in the international system, the European view of American culture and the transatlantic dialogue.

Credits
The course will be taught 2 hours/ semester-week which corresponds to 3 ECTS credits.
5.4. "We always must strive to keep moving forward": Stories of Social Change and Progress in Germany and the US

Lecturer
Julia Sattler

Time
Tuesdays, 8:30 – 11:45

Location
EF50 – Room 0.420 (Building 8)

Course Description
How does social change happen; what moves societies forward? Is it law and policy? Inventions? Revolution? One possible answer to this question is that literary and cultural texts can and do indeed change the world. This class focuses on literature and other forms from the political pamphlet to documentary photography and film as agents of social change and progress from the mid-19th century until today. We will approach the topic from a comparative perspective, looking at works from the United States and from Germany.

Credits
The course will be taught 2 hours/ semester-week which corresponds to 3 ECTS credits.
5.5. Todd Haynes, Douglas Sirk and Rainer Werner Fassbinder: Melodrama between the United States and Europe

Lecturer
Sibylle Klemm

Time
Fridays, 08:30 – 11:45

Location
EF50 – Room 0.420 (Building 8)

Course Description
The course will introduce the American Independent Film Director Todd Haynes with a special emphasis on two directors who influenced his works: the German-American Douglas Sirk, who became famous for his Hollywood productions in the 1950s, and Rainer Werner Fassbinder, one of the most important figures in the New German Cinema. As a student, Haynes developed an admiration for these directors. His film *Far from Heaven* (2002) pays homage to Sirk’s *All that Heaven Allows* (1955) and Fassbinder’s *Ali: Fear Eats the Soul* (1974). In our class we will examine this transatlantic triangle and explore how the three directors used the political potential of melodrama.

Credits
The course will be taught 2 hours/ semester-week which corresponds to 3 ECTS credits.
Chapter 5:
Courses for German & European Studies

5.6. Representations of Dortmund – A Project Seminar

Lecturer
Bernd Eßmann

Time
Thursdays, 10:15 – 13:45

Location
EF50 – Room 0.420 (Building 8)

Course Description
When we think about cities, we may have certain images in our minds, for instance, Paris being a romantic city, or New York as the "city that never sleeps." But what about the city that you are studying in? This will be the question dealt with in this course. We will take a closer look at the way Dortmund is represented, at the 'stories' that are used to create a certain image. For this we will look at a large variety of material such as traveling guides or PR texts, both of Dortmund but also other cities to compare it with.

Credits
The course will be taught 2 hours/ semester-week which corresponds to 3 ECTS credits
5.7. "Be afraid. Be very afraid." - The History of the Horror Film, 1930 – 2020

Lecturer
Sandra Danneil

Time
Mondays, 08:30 – 11:45

Location
EF50 – Room 0.420 (Building 8)

Course Description

The history of horror basically is kept alive by people’s pleasure of facing their fear. In film, the horror genre looks back on a long tradition that stretches back to the late 19th century. By tracing the film history of the American horror cinema, our journey starts during the German Expressionism, the era of Fritz Lang or Robert Wiene, who gave the decisive impulses for the emergence of the Golden Age of Hollywood’s pre-Code horror in the 1930s. The decade gave birth to some of the most iconic monsters such as *Frankenstein’s Monster*, *Dracula*, or *The Mummy*. In the decades after WWII the horror genre entered the American middle-class homes through their TV screens, confronting viewers with new anxieties around the Communist scare and notions of alienation. The 1950s and 1960s showcased horror in form of made-for-TV anthology shows, in which monsters were replaced by treacherous neighbors, enchanted objects, and nasty children that haunted shows like Rod Serling’s *Night Gallery*, Boris Karloff’s *Thriller*, or Alfred Hitchcock’s *Alfred Hitchcock
Chapter 5: Courses for German & European Studies

Presents. In the following decades, horror in the 1970s and 1980s saw a real transformation when movies like The Exorcist or Tobe Hooper’s Texas Chainsaw Massacre launched a whole new era of higher budgeted films that were made by A-list directors. The contemporary horror film has especially become famous for its iconic slasher genre franchises of Scream, Nightmare on Elm Street, and Halloween. The new trend extended the serial franchises of endless returns of Ghostface, Freddy, and Michael Meyers into serial continuities, in which Romero’s zombies and 1980s Americana guided the horror genre into a new age. In this class we will explore the history of the horror film and embark on a close reading of several masterpieces of its kind to explore the legacy of horror in a transcultural context.

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.
5.8. War and Conflict Reporting Through the Feminist Lens

Lecturer
Marta Twardowska

Time
Thursday, July 2: 14:00 – 19:00, R.0.420
Friday, July 3: 12:15 – 19:00
Saturday, July 4: 9:00 – 18:00
Sunday, July 5: 9:00 – 13:15

Location
EF50 – Room 0.420 (Building 8)

Course Description
The aim of this course is twofold. First, we will focus on current feminist debates on gender, war and conflict, militarism and militarization, as well as the relationship between these concepts. We will trace and discuss the ways in which traditional approaches to and understanding of war and conflict are challenged and questioned, paying attention to women’s lives in particular. While exploring the theoretical, we will mainly rely on “feminist curiosity” that, as noted by Cynthia Enloe in Globalization and Militarism: Feminists Make the Link, is something which “involves exploring, questioning – refusing to take something for granted.” With gender as a tool of analysis, we will then go on to read the excerpts from the books and articles by such journalists/photographers and authors as, among others,
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Kim Barker (The Taliban Shuffle: Strange Days in Afghanistan and Pakistan), Kate Brooks (In the Light of Darkness: A Photographer’s Journey After 9/11), Marie Colvin (On the Front Line: The Collected Journalism of Marie Colvin), Lynsey Addario (It’s What I Do: A Photographer’s Life of Love and War), and Janine di Giovanni (Ghosts by Daylight: A Memoir of War and Love; The Morning They Came for Us: Dispatches from Syria; The Place at the End of the World). Not only will we learn about the individual gendered experiences of victims/survivors, but we will also explore personal accounts of the twenty-first century war realities as faced by women reporters themselves. Female agency, women’s activism, and gendered identities and subjectivities will therefore be the major focus of our analysis, which will be done within the framework of broader gender-related issues considered to be of international importance.

Credits

The course will be taught 2 hours/semester-week which corresponds to 3 ECTS credits.
Part III: Track C – Entrepreneurship
Chapter 6: Courses for Entrepreneurship
Chapter 6:
Courses for Entrepreneurship


Lecturer/s
Prof. Liening

Time
Thursdays, 10-2 pm

Location
tba

Course Content
The event deals with the basic contents of business model development.

In particular, the following methods will be used to create business models based on relevant knowledge:

1. Business Model Canvas/ Value Proposition Canvas
2. Lean Startup
3. Customer Development

Through the theoretical development of the methods (seminar) and the practical application of this (exercise), students have the opportunity to comprehensively understand and apply business model development.

Competencies
After successful completion of the event, the participants are in a position to
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to meet the special challenges of young companies with the help of the tools at their disposal. In addition to an exercise in scientific discourse, they receive the competence for the structured creation, validation and further development of sustainable business models. In addition, the students are able to scientifically substantiate why these methods are effective in achieving their goals. for a business development process.

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.
6.2. Foundations of Entrepreneurship

Lecturer/s

Prof. Liening

Time

3 blocked 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.
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Courses for Entrepreneurship

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.
6.3. Concepts and Cases in International Marketing

Lecturers

Prof. Dr. Hartmut H. Holzmüller
M.Sc. Sabrina Heix

Time & Location

Thursdays, 16:00 – 19:00
Fridays, 12:00 – 15:00

Location

Tba

Aim of lecture/ Lecture content

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


- A reading pack with cases and background notes will be available at the Department of Marketing.
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Website

http://www.wiwi.tu-dortmund.de/wiwi/m/de/lehre/veranstalt/sose_19/Concepts_and_Cases/index.html
6.4. International Business (Bachelor)

Lecturers

Prof. Dr. Steffen Strese

Time

Mondays, 9:00 am – 12:00 am
Tuesdays, 9:00 am – 12:00 am

Location

tba

Aim of lecture/ Lecture content

The module provides a comprehensive understanding of business strategies under consideration of external and internal influences as well as international aspects. Based on this, the module discusses growth strategies and cultural influences for international companies and underlines the distinct role of innovations in this context.

Requirements

None
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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:
http://www.wiwi.tu-dortmund.de/wiwi/tm/de/lehre/veranstaltungen/Sommersemester/IB/index.html
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6.5. Business Model Innovation

Lecturer/s
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.

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