Module Handbook

Bachelor „Engineering and Management“ (BEM)

cooperative study program with

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Version: 3
Date: June 2024
Overview: Module Map

Study Area	Engineering			Business and Economics		Language	
						Modules for English Speakers	Modules for German Speakers
6. Sem. (SuSe)	**Internship (15 ECTS)**			**Bachelorthesis (15 ECTS)**			
5. Sem. (WiSe)	Compulsory Elective Process Engineering	Compulsory Elective Process Engineering	Sustainable Energy Supply University of Applied Sciences Merseburg, INW 5 ECTS	International Logistics University of Applied Sciences Merseburg, WIW 5 ECTS	Compulsory Elective Business and Economics	German as a Foreign Language III University of Applied Sciences Merseburg, Language Centre 5 ECTS	Second Foreign Language Spanish III University of Applied Sciences Merseburg, Language Centre 5 ECTS
4. Sem. (SuSe)	Electrical Engineering University of Applied Sciences Merseburg, INW 5 ECTS	Equipments in Process Engineering University of Applied Sciences Merseburg, INW 5 ECTS	Process Control University of Applied Sciences Merseburg, INW 5 ECTS	Supply Chain Management University of Applied Sciences Merseburg, WIW 5 ECTS	Compulsory Elective Business and Economics	German as a Foreign Language II University of Applied Sciences Merseburg, Language Centre 5 ECTS	Second Foreign Language Spanisch II University of Applied Sciences Merseburg, Language Centre 5 ECTS
3. Sem. (WiSe)	Mechanics University of Applied Sciences Merseburg, INW 5 ECTS	Thermodynamics University of Applied Sciences Merseburg, INW 5 ECTS	Introduction to Process Engineering University of Applied Sciences Merseburg, INW 5 ECTS	Principles of Investment Martin-Luther-University Halle BA Business Economics 5 ECTS	Statistics II Martin-Luther-University Halle BA Business Economics 5 ECTS	German as a Foreign Language I University of Applied Sciences Merseburg, Language Centre 5 ECTS	Second Foreign Language Spanish I University of Applied Sciences Merseburg, Language Centre 5 ECTS
2. Sem. (SuSe)	Transport Phenomena University of Applied Sciences Merseburg, INW 5 ECTS	Computing Fundamentals University of Applied Sciences Merseburg, INW 5 ECTS	Material Science University of Applied Sciences Merseburg, INW 5 ECTS	Cost Accounting Martin-Luther-University Halle BA Business Economics 5 ECTS	Statistics I Martin-Luther-University Halle BA Business Economics 5 ECTS	German Language Basics II University of Applied Sciences Merseburg, Language Centre 5 ECTS	Business English University of Applied Sciences Merseburg, Language Centre 5 ECTS
1. Sem. (WiSe)	Physics University of Applied Sciences Merseburg, INW 5 ECTS	Mathematics University of Applied Sciences Merseburg, INW 5 ECTS	Chemistry University of Applied Sciences Merseburg, INW 5 ECTS	Introduction to Financial Accounting Martin-Luther-University Halle BA Business Economics 5 ECTS	Team Communication & Germany in an Intercultural Context University of Applied Sciences Merseburg, SMK & International Office 5 ECTS	German Language Basics I University of Applied Sciences Merseburg, Language Centre 5 ECTS	Technical English University of Applied Sciences Merseburg, Language Centre 5 ECTS

ECTS = European Credit Transfer and Accumulation System, short form CP = Credit Points

Compulsory Elective Process Engineering (Semester 5)	
Biotechnology University of Applied Sciences Merseburg, INW 5 ECTS	Environmental Engineering University of Applied Sciences Merseburg, INW 5 ECTS
Plant Engineering Project University of Applied Sciences Merseburg, INW 5 ECTS	CAD/Mechanical Design University of Applied Sciences Merseburg, INW 5 ECTS

Compulsory Elective Business and Economics			
Principles of Management Martin-Luther-University Halle BA Business Economics 5 ECTS	Introduction to Law Martin-Luther-University Halle BA Business Economics 5 ECTS	Issues in Business Studies I-VI Martin-Luther-University Halle BA Business Economics 5 ECTS	Introductory Econometrics Martin-Luther-University Halle BA Business Economicsss Economics 5 ECTS
Principles of Economics Martin-Luther-University Halle BA Business Economics 5 ECTS	Accounting and Taxation Martin-Luther-University Halle BA Business Economics 5 ECTS	Issues in Economics I-VI Martin-Luther-University Halle BA Business Economics 5 ECTS	Intermediate Microeconomics Martin-Luther-University Halle BA Business Economics 5 ECTS
Marketing Strategy (Marketing) Martin-Luther-University Halle BA Business Economics 5 ECTS	Entrepeneurship Martin-Luther-University Halle BA Business Economics 5 ECTS	Business Plan Seminar Martin-Luther-University Halle BA Business Economics 5 ECTS	Production and Logistics Martin-Luther-University Halle BA Business Economics 5 ECTS

HoMe = **Ho**chschule **Me**rseburg (University of Applied Sciences)
MLU = **M**artin-**L**uther-**U**niversität Halle-Wittenberg

Content:

0 Inhalt

1 Modules Semester 1

1.1 INW_B0467 Physics (HoMe)

Module Number: INW_B0467
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 Semester

Course structure **Course**	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module Part MT 1: Lecture	3SWS	30
Module Part MT 2: Tutorial class	1SWS	30
Module Part MT 3: Laboratory class	1SWS	15

Learning outcomes & competences

Learning outcomes:

- The students possess basic understanding of physical phenomena and relationships.
- The students are able to describe physical problems in a mathematical expression.

Skills:

- Students know the basics about measurement of physical quantities and are able to estimate measurement uncertainty.
- Students are able to analyse simple mechanical systems and to solve problems by application of fundamental mechanical laws.
- Students are able to describe the different types of oscillating systems analytically and use these laws for the solution of problems.
- Students are familiar with the phenomena of wave propagation
- Students are familiar basic principles of hydrostatics and dynamics
- Students are familiar with thermodynamic state and energy variables and are able to apply these on simple model systems.

Content

- Physical quantities, measurement and uncertainty analysis
- Kinematics and dynamics
- Mechanical oscillations and waves
- Fundamentals of hydrostatics and dynamics
- Fundamentals of thermodynamics

Teaching method

- Lecture and self-study units/tutorials
- Tutorial classes
- Practical part

Participation requirements

- none

Use of the module (in other courses)

-

Conditions for the awarding of credit points

- Module Part MT 1: passed written examination
- Module Part MT 2: none
- Module Part MT 3: the regular completion of the practical laboratory course is prerequisite for admission to the written examination
- Total module: passed examination

Examination	**Examination level**
• Written examination • Prerequisite for admission to the written examination is the regular completion of the practical laboratory course	• completion of module
Calculation of the final grade of the module **1:** 100%; **2:** 0%; **3**: 0%	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- Prof. Dr. rer. nat. Klaus-Vitold Jenderka

Teaching staff/Further responsible persons

- Beatrix Mattiebe (physics lab technican)

Language

- English

Literature

- P.A. Tipler, G. Mosca: Physics for Scientists and Engineers
- D. Halliday, R. Resnick, J. Walker: Fundamentals of physics
- R. P. Feynman, R. B. Leighton, M. Sands: The Feynman lectures on physics (http://www.feynmanlectures.caltech.edu/)

Comments

- **Total Module:** none
- **Part Module:** none

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Physics Fundamentals	3	42		18	20	80
2	Tutorial class		1	14	21			35
3	Laboratory class		1	14	21			35
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	none	Written examination 120 min
2	none	none
3	Laboratory protocols	none
Total module	All laboratory protocols	Written examination 120 min
Repeat examination	at least once a year	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	Winter semester	no	100
2	none	Winter semester	no	0
3	preparation of laboratory protocols	Winter semester	yes	0

1.2 INW_B0466 Mathematics (HoMe)

Module Number: KMLU001/INW_B0466
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module Part 1: Lecture	3 SWS	Unlimited
Module Part 2: Tutorial class	2 SWS	Unlimited

Learning outcomes & competences

After taking this class, students should be able to:

- Interpret logical and mathematical symbols
- Apply scalar products and cross products in geometry
- Solve linear systems of equations and find eigenvalues and eigenvectors of matrices
- Calculate limits of functions
- Be able to differentiate elementary functions
- Use derivatives in optimization problems
- Give Taylor series to given functions
- Use Riemann sums to find the area under a curve
- Recognize the connection between derivatives and integrals (Fundamental Theorem of Calculus)
- Apply simple methods of integration (integration by parts, substitution, partial fractions)
- Find extremal points of functions of several variables

Content

- Logic and Symbols
- Basics of linear algebra (vectors, matrices, scalar product, cross product)
- Systems of linear equations
- Eigenvalues, Eigenvectors
- Limits and Continuity
- Rules of differentiation
- Optimization using differentiation
- Riemannian sums
- Area under curves
- Fundamental Theorem of Calculus
- Methods of integration (integration by parts, substitution, partial fractions)
- Multidimensional functions
- Extremal points of functions of several variables

Teaching method

- Lecture
- Tutorial class

Participation requirements

- none

Use of the module (in other courses)

Mathematics is applied in different scientific areas such as, for example, statistics, physical chemistry or physics, just to name a few possible subjects in which different topics of this module might be helpful.

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
• Written examination, 120 minutes	• completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%, 3: 0%	1

Member of staff in charge of module

- Dr. rer. nat. Benjamin Wacker

Teaching staff/Further responsible persons

Language

- English

Literature

- Textbook for linear algebra: Linear Algebra with Applications by Steven J. Leon (ISBN-13: 978-1292354866)
- Textbook for Calculus: Calculus by James Stewart (ISBN-13: 978-0495383628)
- Lecture notes via HoMe-Portal

Comments

- **Total Module:** none
- **Part Module:** none

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Mathematics	3	45	30	0	15	90
2	Tutorial class	Mathematics	2	30	20	0	10	60
3								
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	none	Written examination (Duration:120 minutes)
2	none	
3		
Total module		Written examination (Duration:120 minutes)
Repeat examination	at least once a year	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	None	Winter semester	no	100
2	None	Winter semester	no	0
3				

1.3 INW_B0143 Chemistry (HoMe)

Module Number: KMLU008 / INW_B0143
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module Part 1: Lecture	2 SWS	60
Module Part 2: Tutorial class	1 SWS	20 each group
Module Part 3: Laboratory class	1 SWS	12 each group

Learning outcomes & competences

- Primary introduction into the field of Inorganic-, Organic-, Physical- and Analytical Chemistry.
- Basic knowledge about atomic models, bonding force types, major classes of inorganic and organic substances in context to intra- and intermolecular interactions and their fundamental relation to the physical- and chemical properties of substances and materials.
- Repetition of basics in engineering and natural science related matter.
- Laboratory workshop to receive practical experience lab-orientated chemical work processes.

Content

- Basic introduction into the fields of Chemistry, Materials and Chemical Analytics
- Repetition of fundamental physical and chemical terms and parameters in an engineering context
- Historical and recent concepts in atom theory and forces in condensed matter
- Structure and trends in the Periodic table of the Elements (PSE)
- Introduction into important inorganic and organic substance classes
- Introduction into intramolecular and intermolecular interactions and their fundamental relations to the physical- and chemical properties of substances and materials
- Chemical processes (solve, dilute, …) and chemical reactions and their thermodynamical description
- Law of mass action, chemical equilibrium, Stöchiometrics, Formular writing, balance of mass and energy, …
- Chemical Reactions standard reactions like Redoxreaction, Addition, Elemination, Substitution, Hydrolysis, ….
- Chemistry of Acids and Bases, pH-Value, Autoprotolysis of water, …
- Electrochemical processes and Corrosion of metals
- Fundamental Structures and Reactions in Organic Chemistry
- Qualitative and Quantitative Analysis for material characterization

Teaching method

- Lecture
- Tutorial class
- Practical laboratory classes

Participation requirements

- none

Use of the module (in other courses)

- PO 2017- Engineering - 3. Semester (BENG)
- 2016- Ingenieurpädagogik - 1. Semester (BINGP)

Conditions for the awarding of credit points

- Participation and successful passing laboratory work (…e.g. protocols)
- Passed written examination

Examination	**Examination level**
• written exam (120 Min.)	• completion of module

Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%; **3**: 0%	1

Member of staff in charge of module

- Prof. Dr. Bernhard Neumann

Teaching staff/Further responsible persons

Language

- English

Literature

- J.E. Mc Murry, R.C. Fay, J.K. Robinson, Chemistry, 7th. Edition, Pearson Publishing Company
- S.S. Zumdahl, S.A. Zumdahl, Chemistry, 7th. Edition, Houghton-Mifflin Publishing Company, Free Download !!!, https://chemistry.com.pk/books/chemistry-10e-by-zumdahl-and-decoste/
- F.A. Cotton, G. Wilkinsen, C.A. Murillo, M. Bochmann, Advanced Inorganic Chemistry, 6th-Edition, Wiley-Interscience, downloadable pdf-File via Google Search
- J.E. Mc Murry, Organic Chemistry, 8th-Edition, Cengage Learning Publishing House
- J. Clayden, N. Greeves, S. Warren, Organic Chemistry, 2nd-Edition., Oxford University Press
- P. Atkins, J. de Paula, Physical Chemistry, 9th Edition, W.H. Freemann Publishing Company
- U. Ritgen, Analytical Chemistry I, 1th. Ed., Springer
- G.D. Christian, P.K. Dasgupta, K.A. Schug, Analytical Chemistry, 7th-Ed., Wiley Publishing

Comments

- **Total Module: -**
- **Part Module: -**

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Chemistry	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	none	Written examination 90 min
2	none	
3	Laboratory access check and protocol	
Total module	Laboratory protocol	Written examination 90 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	winter semester	no	100
2	none	winter semester	no	0
3	none	winter semester	yes	0

1.4 INW_B0487 Introduction to Financial Accounting (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Introduction to Financial Accounting

General module

3. Version of 20.01.2023

Identification number:
WIW.06814.03

Learning objectives:

- Understanding of double-entry bookkeeping and principles of external accounting
- Students become familiar with the financial components of the annual financial statements (balance sheet, income statement, and cash flow statement)
- Develop the ability to perform and understand the major annual financial statement entries
- Become familiar with the basic principles of financial reporting and how to apply them to prepare accurate and transparent financial statements

Contents:

- Financial statement (balance sheet, income statement, statement of cashflows)
- Accounting cycle
- System of double entry accounting (capturing economic events, accruals and deferrals, reporting financial results)
- Posting entries and adjustments of important business transactions (merchandising activities, financial assets, plant and intangible assets, liabilities, equity)
- Preparation of annual financial statement

Module provider (effective from 21.12.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Dr. Philipp Clemens Richter

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from WS 2020	1.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:
none

Eligible:
none

Length:
1 term

Teaching Period:
each winter term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Exercises	4	60	winter term
Reading and independent study	0	75	winter term
Assessment preparation	0	15	winter term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	no later than 4 weeks after the end of lectures
1. Repetition:	until the beginning of the following lecture term
2. Repetition:	within one year after the first repetition

Module 1.5 Team Communication & Germany in an intercultural context

Module Number:
Workload PS: 150
Credits: 5
Semester: Winter
Duration: 1 Sem.

Course structure	**SWS**	**Max. number of participants**
Module Part 1: Seminar 1 Module Part 2: Seminar 2	2 2	25

Learning outcomes & competences

- Raising cross-cultural awareness and developing intercultural competence
- Explaining and understanding cultural phenomena, intercultural issues and critical incidents
- Communicating successfully in an intercultural environment and in everyday life in Germany
- Knowing the basics of German academic and business culture

- Understanding of teams and the special gains of team work
- Knowing the basic concepts of structuring and organizing a team efficiently
- Knowing methods and strategies for optimizing the resources of a team and using its creativity
- Perception of team leadership concepts

Content

- Basics of intercultural theory
- My own cultural programming / intercultural experience
- Dealing with stereotypes
- Country specifics, e.g. geography, politics, economy, culture, education system, language
- Getting to know German traditions/rules/customs: guidelines for business, studying, everyday life, dealing with authorities and private persons
- Discussing critical incidents

- Understanding the term “team”: definitions and concepts
- Team dynamics
- Methods of how to organize, structure and develop teams and team work
- Methods of team counselling
- Concepts of how to lead a team

Teaching method

- The seminar consists of short presentations, discussions and exercises, partly simulating a team situation

Participation requirements

- None

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Regular attendance
- Writing an essay

Examination	**Examination level**
• Home assignment: Essay about a topic from Module Part 1 or 2	• Completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	1

Member of staff in charge of module

- Uwe Schiffke

Teaching staff

- TBA

Language

- English

Literature

R. Camerer/ J. Mader, Intercultural Competence in Business English – www.elc-consult.com
R. Camerer/ J. Mader, A-Z Intercultural Communication, Academic Study Kit 2016
B. Dignen, Communicating Across Cultures, Cambridge University Press 2011
Hans-Jürgen Lüsebrink: Interkulturelle Kommunikation: Interaktion, Fremdwahrnehmung, Kulturtransfer – 2016
Hamid Reza Yousefi: Grundbegriffe der interkulturellen Kommunikation – 2014
Germany New Horizons / Study in Germany Land of Ideas (DVD)
www.daad.de
www.study-in-germany.de

Comments

Appendix: assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	Team Communication	2	30	15		30	75
2	Seminar	Germany in an intercultural context	2	30	15		30	75
3								
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Regular attendance	Home assignment (essay, 5 pages)
2		
3		
Total module		
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester / summer semester)	Obligation to attend	Weighting of module grade in %
1	None	Winter	Yes	100
2	None	Winter	Yes	
3				

1.6 INW_B0468 Language I, Technical English (for native speakers of German)(HoMe)

Module Number: KMLU026 / INW_B0468
Workload PS: 150h
Credits: 5.0 CP
Duration: 1 Sem.
Semester: Winter

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module Part 1: Seminar	4	25

Learning outcomes & competences

- Being able to communicate successfully in an English-speaking environment
- Being able to discuss a wide range of general, job-related and familiar subject-specific topics
- Being able to explain technical phenomena and specific processes
- Understanding written and spoken information on a variety of technical issues: e.g. instructions, reports, interviews, presentations, lectures.

Content

- Technical functions and applications
- Describing technical processes
- Engineering design
- Energy engineering
- Automation / Robotics
- New developments in science & technology
- Explaining tests & experiments
- Linguistic structures

Teaching method

- Language classes

Participation requirements

- English skills at CEF Level B2 or equivalent

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examination

Examination ● Written and oral examination	**Examination level** ● CEF Level C1
Calculation of the final grade of the module ● 100%	**Weighting of grade for calculation of final grade** ● 1
Member of staff in charge of module ● Uwe Schiffke **Teaching staff** ● TBA	
Language ● English	
Literature ● Ibbotson, M., Professional English in Use - Engineering, Cambridge University Press 2009 ● Bonamy, D., Technical English 3 and 4 (1st / 2nd Edition), Pearson 2011 / 2022 ● Technoplus English (Software), Eurokey 2011	
Comments ● None	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	Technical English	4	60	60	0	30	150
2								
3								
Workload module in total								**150**

Examination	Pre-exam achievements	Type of examination
1	None	Written examination 60 min.
2	None	Oral examination 15 min.
3		
Total module	None	Written and oral examination 75 min.
Repeat examination	Winter semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	English at CEF Level B2	Winter semester	No	100
2				
3				

1.7 INW_B0468 Language I, German Language Basics I, A1 (for non-native speakers of German) (HoMe)

Module Number:
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 2 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
German Language Basics I: Seminar	8	20
German Language Basics II: Seminar	8	

Learning outcomes & competences

CEF Level A1:

- Being able to understand basic instructions and take part in a basic conversation on a predictable topic.

CEF Level A2:

- Being able to express requirements and opinions in a familiar context, understand straightforward information within a known area and write short messages with personal information.

Content

- Basic topics for everyday situations, e.g. Giving personal information, Daily routine, Leisure activities, Shopping, Eating out, Health, Travelling and sightseeing, Customs and traditions;
- Basics of Grammar
- Basic facts about Germany
- Basic university-related vocabulary

Teaching method

- Language classes

Participation requirements

- Only for non-native speakers of German
- English skills at CEF Level B2 or equivalent

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination ● Written and oral examination	**Examination level** ● CEF A1 – A2
Calculation of the final grade of the module • 100%	**Weighting of grade for calculation of final grade** • 1
Member of staff in charge of module • Oda Brauer **Teaching staff** • TBA	
Language ● German (with English as language of instruction)	
Literature ● Buscha/Szita, Spektrum Deutsch (A1+/A2+), Schubert 2018 ● Nied Curcio (et al), Kurs DaF – Deutsch für Studium und Beruf, Klett 2023 ● Fandrych/Tallowitz, Klipp und Klar - Übungsgrammatik für DaF A1-B1; Klett 2021	
Comments • Course levels can be accessed according to prior knowledge of German	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	**Seminar**	**Language Basics I**	**8**	**120**	**15**		**15**	**150**
2	Seminar	Language Basics II	8	120	15		15	150
3								
Workload modules in total								**300**

Examination	Pre-exam achievements	Type of examination
1	**None**	**Written examination 60 min.**
2	None	Oral examination 15 min.
3		
Total module		Written and oral examination 75 min.
Repeat examination	Winter/Summer semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	**Non-native speaker of German / English B2**	**Winter semester**	**Y/N**	**100**
2	Non-native speaker of German / English B2	Summer semester	Y/N	100
3				

2 Modules Semester 2

2.1 INW_B0481 Transport Phenomena (HoMe)

Module Number: INW_B0481
Workload PS: 150 h
Credits: 5,0 CP
Semester: Summer semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: Lecture (VO)	2 SWS	50
Module part LV2: Tutorial class (ÜO)	1 SWS	2 groups á 25 participants
Module part LV3: Laboratory class (PO)	1 SWS	10 groups á 5 participants

Learning outcomes & competences

- The students are familiar with the basics of hydrostatics and hydrodynamics
- The students can apply practice-oriented methods for the solution of hydrodynamic problems of one-dimensional fluid flow of ideal and real fluids
- The experiences from the accompanying fluidic field work seminar enable the students to plan simple measurements at fluidic plants, to conduct those measurements by themselves, to interpret the findings and convert them into meaningful parameters

Content

1. Introduction (Chapter 1 in [1])
2. Fluid statics (Chapter 2 in [1])
3. Elementary fluid dynamics – the Bernoulli-equation (Chapter 3 in [1])
4. Fluid kinematics (Chapter 4 in [1])
5. Finite Control Volume Analysis (Chapter 5 in [1])
6. Viscous flow in pipes (Chapter 8 in [1])
7. Flow over Immersed Bodies (Chapter 9 in [1])
8. Compressible Flow (Chapter 11 in [1])

Teaching method

- Lecture with power-point-presentations (online), videos and solved problems
- Homework and worked through solutions in seminar and/or tutorial
- Lab work

Participation requirements

- none

Use of the module (in other courses)

The developed basic skills in the field of fluid mechanics enable the student to solve tasks in advanced and application-oriented modules (processing machines, fluid technics I, plant engineering, turbo machines, piston machines, project work, industrial practice and bachelor thesis).

- 2017- Engineering - 5. Semester (BENG)

- 2014- Chemie- und Umwelttechnik - 3. Semester: Orientierungsphase (BCUT-7)
- 2017- Green Engineering - Gestaltung nachhaltiger Prozesse - 3. Semester (BGE)
- 2015- Ingenieurpädagogik - 3. Semester: Berufliche Fachrichtung I (Metalltechnik) (BINGP)
- 2018- Maschinenbau/Mechatronik/Physiktechnik - 3. Semester: Pflichtmodule Maschinenbau
- (BMMP-7)
- 2018- Wirtschaftsingenieurwesen (Dualer Studiengang - 2018) - 3. Semester (BWIW-7 (2018))
- 2014- Wirtschaftsingenieurwesen (Dualer Studiengang - 2014) - 3. Semester: Energietechnik (BWIW-7 (2014))

Conditions for the awarding of credit points

• Total module: passed examination

Examination	**Examination level**
● Written examination ● Prerequisite for admission to the written examination is the regular completion of the practical laboratory class	• completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 70%; **2:** 0%; **3:** 30%	1

Member of staff in charge of module

Dipl.-Ing. Michael Schnitzlein (lecturer), PhD., Prof. Dr. Ulf Schubert (module manager)

Teaching staff/Further responsible persons

- Dipl.-Ing. Frank Ramhold (laboratory engineer)
- Dipl.-Ing. Andreas Goldner (laboratory engineer)
- Timo Stam-Creutz, M. Eng. (laboratory engineer)

Language

- English

Literature

[1] 2021 Andrew L. Gerhart (Autor), John I. Hochstein (Autor), Philip M. Gerhart (Autor) “Munson, Young and Okiishi's **Fundamentals of Fluid Mechanics**” International Adaptation (SI-Version, 9. Edition), ISBN-13 : 978-1119703266

Comments

- Total module: none
- Part module: none

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Transport Phenomena	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Laboratory protocal	Written examination 120 min
2	none	none
3	none	none
Total module	Laboratory protocal	Written examination 120 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	Summer semseter	no	70
2	none	Summer semester	no	0
3	none	Summer semester	yes	30

2.2 INW_B0470 Computing Fundamentals (HoMe)

Module Number: INW_B0470
Workload PS: 150 h
Credits: 5,0 CP
Semester: Summer semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: Lecture (VO)	2 SWS	50
Module part LV2: Laboratory class (PO)	2 SWS	25 (*2 groups = 50)

Learning outcomes & competences

Part 1 LV1: Lecture „Computer Sciences“

- The students know the essential development steps of computer technology from the first steps until today. They know the basic concepts of digital data processing and the most important categories of computers and their purposes. They are familiar with the basics of manufacturing CPUs, their challenges and limitations. They know the hardware of modern IT systems and their fields of application, they know how these technologies work in principle. They have knowledge of computer networking and data exchange from the local bus system to the WorldWideWeb.
- The theoretical content from Part 1 is consolidated in exercises on the individual topics.

Part 2 LV2: Laboratory class „Software Applications”

- The students will learn basics about programming C

Content:

Part 1: Computer Science

- Computer Architecture
- Binäry system and boolean algebra
- Webtechnology
- Fundamentals of Operating Systems
- Fundamental programming concepts

Part 2: Software Applications

- Programming in C

Teaching method

- Lecture with power-point-presentations and self-study units
- Exercises and tutorials
- Practical part in PC-Laboratories
- student presentation (practical part)

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed written examination and student presentation of selected software applications

Examination	**Examination level**
• written examination • student presentation (practical part)	• completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 50%; **2:** 50%	½ written examination ½ student presentation (practical part)

Member of staff in charge of module

- Modul manager: Nico Scheithauer

Teaching staff/Further responsible persons

- Nico Scheithauer

Language

- English

Literature

- Hansen/Neumann,Wirtschaftsinformatik 1, UTB Verlag 8. Auflage
- Ernst,Grundkurs Informatik, Vieweg+Teubner Verlag,
- Hromkovic, Lehrbuch Informatik Vieweg+Teubner Verlag
- Horn/ Kerner/ Forbig, Lehr- und Übungsbuch Informatik, Fachbuchverlag Leipzig

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Computing Fundamentals	2	30	15		30	75
2	Laboratory class		2	30	15	30		75
3								
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Tutorial	Written examination 90 min
2	none	student presentation
3		
Total module	Successful exercises	Written examination (thoretical part) student presentation (practical part)
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer semester	no	50
2	none	summer semester	yes	50
3				

2.3 INW_B0142 Material Science (HoMe)

Module Number: INW_B0142
Workload PS: 150 h
Credits: 5,0 CP
Semester: Summer semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	1 group with 25 participants
Module part LV2: **Tutorial class (ÜO)**	1 SWS	1 group with 25 participants
Module part LV3: **Laboratory class (PO)**	1 SWS	5 groups with 5 participants

Learning outcomes & competences

- Classification of the engineering materials concerning their structure and chemical composition
- Recognition and abstraction of the coherences between structure and properties of metals
- Knowledge and applicability of the coherences shown in the iron-carbon diagram
- Execution of basic test in the field of engineering material
- Handling with scientific literature during self-study

Content

- Classification of engineering materials
- States of solid objects
- Ideal crystals
- Real crystals
- Classy state and state of super cooled melt
- Alloy formation
- Fe-C-alloys and the iron-carbon diagram
- Material testing
- Fundamental lab courses concerning materials engineering

Teaching method

- Lecture with power-point presentation and self-study units
- Exercises and tutorials
- Laboratory class

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- completion of the lab course

- passed examination

Examination	**Examination level**
• Written examination: 120 minutes • The attendance of the lab courses as well as the successful execution of the lab course tasks including the creation of a lab protocol are preconditions for the examination.	• Completion of the module
Calculation of the final grade of the module **1: 100 %; 2: 0 %; 3: 0 %**	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- M.Sc. Marcel Auerbach

Teaching staff/Further responsible persons

- Prof. Dr. Beate Langer
- Laboratory engineer from Prof. Langer
- Petra Schomburg

Language

- English

Literature

- J. F. Shackelford: Introduction to Material Science for Engineers, ISBN 0273793403, Pearson Education Limited 2016
- W. D. Callister, D. G. Rethwisch: Materials Science and Engineering: An Introduction, ISBN 1118324579, JOHN WILEY & SONS INC 2013
- T. A. Osswald: Material Science of Polymers for Engineers, ISBN 978-1-56990-514-2, Carl Hanser Verlag GmbH & Co. KG 2012
- W. Grellmann, S. Seidler: Polymer Testing, ISBN 978-1-56990-548-7, Carl Hanser Verlag GmbH & Co. KG 2013

Comments

- There is a wish to declare the lab course as an independent examination performance, which is necessary to complete the module, but does not have to be already completed as a preliminary examination performance for the examination. This would be similar to the colloquium during the project work.

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Material Science	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Lab course		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Lab course protocol	Written examination 120 min
2	none	none
3	pre tests before experiments	none
Total module	Lab course protocol	Written examination 120 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer semester	no	100
2	none	summer semester	no	0
3	none	summer semester	yes	0

2.4 INW_B0488 Cost Accounting (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Cost Accounting

General module

4. Version of 20.01.2023

Identification number:

WIW.04858.04

Learning objectives:

After participating in this course, students will be able to understand the basic systems of cost accounting and situate these systems in the context of business practice. Students will be able to illustrate how cost accounting supports various operational and strategic decisions. At the same time, students will be able to evaluate the advantages and disadvantages of different cost accounting systems. They will understand advantages and disadvantages of full and partial cost accounting. Furthermore students will be able to apply different systems of cost accounting to problems of business practice and evaluate the applicability of different systems of cost accounting to specific situations.

Contents:

In this course, students will learn the main issues and methods of cost and revenue accounting. These are:

- Classification of cost and revenue accounting in corporate accounting
- Cost-type accounting
- Cost-center accounting
- Product and service costing
- Cost functions
- Short-term income statement
- Break-even analysis

Module provider (effective from 16.12.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Philipp Schreck

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	2. or 4.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	2.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:

none

Eligible:

none

Length:

1 term

Teaching Period:

each summer term

Student's work load:

150 Hours

Credit points:

5 CP

Language:

English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	summer term
Exercises	2	30	summer term
Reading and independent study	0	45	summer term
Assessment preparation	0	45	summer term

Coursework:

- none

Preparatory work:

- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	not later than 4 weeks after the end of lectures
1. Repetition:	until the beginning of the following lecture term
2. Repetition:	within one year after the date of the 1st repetition

2.5 INW_B0471 Statistics I (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Statistics I
Descriptive Statistics and Basic Concepts of Probability

General module
4. Version of 08.07.2022

Identification number:
WIW.03057.04

Subhead:
Descriptive Statistics and Basic Concepts of Probability

Learning objectives:
- Interpretation and application of statistical measures or tabular and graphical displays to describe data
- Analysis of relationships between variables
- Knowledge of basic concepts of probability theory

Contents:
- Methods and approaches of descriptive statistics
- Concepts of data collection and data analysis
- Measures of location and dispersion, measures of skewness and of concentration
- Basics of multivariate distributions and statistical dependence
  Simple regression analysis, correlation and measures of association
- Index numbers and basic approaches to time series analysis
- Basic concepts of probability, sample space, conditional probability, total probability and Bayes' theorem
- Discrete and continous random variables and their distributions

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Christoph Wunder

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	2.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	2.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:

none

Eligible:

Mathematics I

Length:

1 term

Teaching Period:

each summer term

Student's work load:

150 Hours

Credit points:

5 CP

Language:

English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	summer term
Reading and independent study	0	30	summer term
Exercises	2	30	summer term
Reading and independent study	0	45	summer term
Assessment preparation	0	15	summer term

Coursework:

- none

Preparatory work:

- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	no later than 4 weeks after ending of lectures
1. Repetition:	until beginning of the following lecture term
2. Repetition:	within 1 year after the 1st Repetition

2.6 INW_B0472 Language II, Business English (for native speakers of German)(HoMe)

Module Number: INW_B0472
Workload PS: 150 h
Credits: 5 CP
Semester: Summer
Duration: 1 Sem.

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module Part 1: Seminar	4	25

Learning outcomes & competences

- Being able to communicate successfully in an English-speaking environment
- Being able to use English in an interculturally appropriate way
- Using standard structures of written and oral communication appropriately
- Understanding relevant written and spoken information on common business topics
- Being able to participate in meetings and discussions

Content

- Communication in International Projects
- Managing and Monitoring Projects
- Business News
- Meetings and Negotiations
- Discussing Case Studies
- Linguistic Structures
- Getting to Know the Company

Teaching method

- Language classes

Participation requirements

- English skills at CEF Level B2

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examination

Examination ● Written and oral examination	**Examination level** ● CEF Level C1
Calculation of the final grade of the module ● 100%	**Weighting of grade for calculation of final grade** ● 1
Member of staff in charge of module ● Uwe Schiffke **Teaching staff** ● TBA	
Language ● English	
Literature ● Cotton, D. / Falvey, D., et al, Market Leader Upper-Intermediate 3rd Edition, Pearson 2011 ● Dubicka, I., et al, Business Partner B2+, Pearson 2019 ● Business Spotlight	
Comments	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	Business English	4	60	60	0	30	150
2								
3								
Workload module in total								**150**

Examination	Pre-exam achievements	Type of examination
1	None	Written examination 60 min.
2		Oral examination 15 min.
3		
Total module		Written and oral examination 75 min.
Repeat examination	Summer Semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	None	Summer Semester	No	100
2				
3				

2.7 INW_B0472 Language II, German Language Basics II, A1-A2 (for non-native speakers of German) (HoMe)

Module Number: INW_B0472
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 2 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
German Language Basics I: Seminar	8	20
German Language Basics II: Seminar	8	

Learning outcomes & competences

CEF Level A1:

- Being able to understand basic instructions and take part in a basic conversation on a predictable topic.

CEF Level A2:

- Being able to express requirements and opinions in a familiar context, understand straightforward information within a known area and write short messages with personal information.

Content

- Basic topics for everyday situations, e.g. Giving personal information, Daily routine, Leisure activities, Shopping, Eating out, Health, Travelling and sightseeing, Customs and traditions;
- Basics of Grammar
- Basic facts about Germany
- Basic university-related vocabulary

Teaching method

- Language classes

Participation requirements

- Only for non-native speakers of German
- English skills at CEF Level B2 or equivalent

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination ● Written and oral examination	**Examination level** ● CEF A1 – A2
Calculation of the final grade of the module • 100%	**Weighting of grade for calculation of final grade** • 1
Member of staff in charge of module • Oda Brauer **Teaching staff** • TBA	
Language ● German (with English as language of instruction)	
Literature ● Buscha/Szita, Spektrum Deutsch (A1+/A2+), Schubert 2018 ● Nied Curcio (et al), Kurs DaF – Deutsch für Studium und Beruf, Klett 2023 ● Fandrych/Tallowitz, Klipp und Klar - Übungsgrammatik für DaF A1-B1; Klett 2021	
Comments • Course levels can be accessed according to prior knowledge of German	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	Language Basics I	8	120	15		15	150
2	**Seminar**	**Language Basics II**	**8**	**120**	**15**		**15**	**150**
3								
Workload modules in total								**300**

Examination	Pre-exam achievements	Type of examination
1	None	Written examination 60 min.
2	**None**	**Oral examination 15 min.**
3		
Total module		Written and oral examination 75 min.
Repeat examination	Winter/Summer semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	Non-native speaker of German / English B2	Winter semester	Y/N	100
2	**Non-native speaker of German / English B2**	**Summer semester**	**Y/N**	**100**
3				

3 Modules Semester 3

3.1 INW_B0473 Mechanics (HoMe)

Module Number: INW_B0473
Workload PS: 150 h
Credits: 5.0 CP
Semester: Winter semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	50
Module part LV2: **Tutorial class (ÜO)**	2 SWS	2 groups á 25 participants

Learning outcomes & competences

Basic competence to understand and apply analytical strategies which enable to solve technical problems in the field of statics and strength theory

- ability to state equilibrium conditions in order to calculate basic loads
- knowledge of different support types in mechanics and how to calculate different support reaction forces
- ability to calculate internal forces for simple structures, trusses and beams as a basis further strength analysis
- understand basic relationships in strength theory and their application in the design of pipes and pressure vessels

Content

Fundamentals of statics

- force systems (force, moment, resultant)
- systems and supports
- free body diagram
- equilibrium conditions
- plane trusses
- internal forces in beams
- center of gravity

Fundamentals of strength theory

- stress and strain
- Hooke's law, stress-strain diagram
- stresses in thin-walled cylinders and spheres

Teaching method

- Lecture with power-point-presentations / board and self-study units
- Exercises and tutorials

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
• Written examination	• completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%;	1

Member of staff in charge of module

- Prof. Dr.-Ing. Jonas Fischer

Teaching staff/Further responsible persons

Language

- English

Literature

- Gross, D., Hauger, W., Schröder, J., Wall, W.A., Rajapakse, N.: Engineering Mechanics 1 - Statics, Springer
- Gross, D., Hauger, W., Schröder, J., Wall, W.A., Bonet, J.: Engineering Mechanics 2 - Mechanics of Materials, Springer

Comments

- **Total module:** none

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Mechanics	2	30	15	15	30	90
2	Tutorial class		2	30		30		60
3								
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	none	Written examination 120 min
2	none	none
3		
Total module		Written examination 120 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	winter semester	no	100
2	none	winter semester	no	0
3				

3.2 INW_B0144 Thermodynamics (HoMe)

Module Number: INW_B0144
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	25
Module part LV2: **Tutorial class (ÜO)**	1 SWS	2 groups á 13 participants
Module part LV3: **Laboratory class (PO)**	1 SWS	5-7 groups á 4-5 participants

Learning outcomes & competences

- Understand and apply basics of thermodynamics.
- The students are able to
  balance energies and losses by energy transfer processes
  appliance the laws of thermodynamics to simple processes of energy conversion / heat transfer
  execute basic engineering via analytical solving of equations
    via using of spreadsheet analysis inclusive "start value - Goal seek"
    via using of diagrams / reference books

Content

1. modeling by the example of processes in gases
1.1 reference systems, state variables, process factors
1.2 equation of state, internal energy, enthalpy of perfect gas
2. laws of thermodynamics
2.1 zeroth law of thermodynamics - thermal equilibrium
2.2 first law of thermodynamics - conservation of energy, heat, work
2.3 second law of thermodynamics - reversible and irreversible processes
2.4 Entropy, Exergy
2.5 perpetual motion machine
2.6 third law of thermodynamics – universal reference point laws of thermodynamics
3. basics of heat transfer
3.1 conduction, radiation and convection
3.2 complex heat carriage, heat transition, thermal resistor
4. energy transformation
4.1 internal combustion engine, heat engine, steam - power - process
4.2 heat pumps with compressors
4.3 thermodynamics of heating and cooling / air-conditioning / humid air

Teaching method

- Lecture with power-point-presentations and self-study units
- Exercises and tutorials
- Practical part

Participation requirements

- none

Use of the module (in other courses)

- Module 5.3 Sustainable Energy Supply

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
● Written examination ● Prerequisite for admission to the written examination is the regular completion of the practical laboratory class	• completion of module
Calculation of the final grade of the module **1:** 100%; **2:** 0%; **3**: 0%	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- Prof. Dr. Ing. Dietmar Bendix

Teaching staff/Further responsible persons

- Carsten Sichmund (laboratory engineer)

Language

- English

Literature

Vizureanu, Petrică; Thermodynamics and Energy Engineering, IntechOpen, 2020, 978-1-83880-569-2

Newaz Kazi, Salim; Heat Transfer : Fundamentals, Enhancement and Applications; IntechOpen, 2023,

978-1-80355-940-7

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Thermo-dynamics	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Laboratory access check	written examination 120 min
2	none	none
3	none	none
Total module	Laboratory protocol	Written examination 120 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	winter semester	no	100
2	none	winter semester	no	0
3	none	winter semester	yes	0

3.3 INW_B0474 Introduction to Process Engineering (HoMe)

Module Number: INW_B0474
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	50
Module part LV2: **Tutorial class (ÜO)**	1 SWS	2 Groups * 25
Module part LV3: **Laboratory class (PO)**	1 SWS	10 Groups * 5

Learning outcomes & competences

- Students gain a basic understanding of the nature of process engineering and an overview of the field.
- They will become familiar with the basic operations of mechanical and thermal process engineering in bird's eye view and can explain the underlying physical principles.
- On the basis of large-scale technical processes (example: ammonia synthesis, ethylene cracker), students learn about the application of individual basic operations and their links and can identify individual basic operations and their function in them.
- They will be able to read, interpret, and create basic and process flowsheets.
- Students will understand simple mole, mass and energy balances and are able to set them up, interpret them and calculate them (i.e., single-substance balances).
  They can critically evaluate the results by order of magnitude.
- The students learn composition measures of multicomponent systems, such as proportions or loading, and know how to use them. These are the basis of multi-component balances, which students can create and calculate. They are able to evaluate simple material and energetic networks and draw up and solve the corresponding balances.
- Students develop initial skills in analytical science problem solving by applying scientific methodology (thesis-experiment-proof). The students recognize and grasp increasingly complex procedural interrelationships.
- The students show a sense of responsibility for energetic and economic aspects. They develop engineering approaches with logical problem analysis. They work independently and responsibly

Content

Lecture and tutorial class: (In the tutorial class the topics of the lecture are deepened by solving example problems).

- Introduction to the field of process engineering
- Basic elements of a process engineering plant
- Overview of basic process engineering operations
- Drawing representation of processes by flow diagrams with its elements (basic flow diagram, process flow diagram)
- Analysis of selected large-scale processes
- Simple mass, material and energy balances
- Composition measures of multi-component systems (proportion, loading, etc.)
- Material and energy balances of multi-component systems
- Material and energy balances of systems with several elements
- Balancing with the help of matrix calculations

Content

Laboratory class:

- Students learn about typical laboratory work. The focus is on methods for the determination of substance data or concentrations always with reference to the course. In order to meet the different requirements of the students, a part of the laboratory course is offered as a selection.
- Evaluation of the practical work on the computer, especially the handling of MS Excel.

Teaching method

- Lecture with power-point-presentations and self-study units
- Tutorial class
- Practical field work (laboratory class)

Participation requirements

- none

Use of the module (in other courses)

-

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
● Written examination ● Successful completion of the laboratory class	● completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%; **3**: 0%	1

Member of staff in charge of module

- Prof. Dr.-Ing. Thomas Martin

Teaching staff/Further responsible persons

- Dipl.-Ing. Frank Ramhold
- Dipl.-Ing. Sebastian Lebioda

Language

- English

Literature

Transcript of the lecture

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Introduction to Process Engineering	2	30	15	0	0	45
2	Tutorial class	Introduction to Process Engineering	2	30	30	0	0	60
3	Laboratory class	Introduction to Process Engineering	1	15	30	0	0	45
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1		Written examination (90 minutes)
2		
3	Successful completion of the laboratory class	
Total module	Successful completion of the laboratory class	Written examination (90 minutes) in which the content of the whole module will be examined
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1		Winter semester	no	100%
2		Winter semester	no	0%
3		Winter semester	yes	0%

3.4 INW_B0489 Principles of Investment (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Principles of Investments

General module

3. Version of 08.07.2022

Identification number:
WIW.06214.03

Learning objectives:
Students...
- understand the main principles of finance
- assess and evaluate different financial instruments and investment decisions
- analyze the capital market and its actors, banks and organizations and the stock exchange market

Contents:
- Financial mathematics
- Investment decision making
- Financial markets
- Forms of financing
- Financial policy
- Business valuation

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Jörg Laitenberger

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	5.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	5.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:
Mandatory:
none
Eligible:
none

Length:
1 term

Teaching Period:
each winter term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	winter term
Reading and independent study (Taught session)	0	45	winter term
Exercises	1	15	winter term
Reading and independent study (Exercises)	0	45	winter term
Assessment preparation	0	15	winter term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	not later than 4 weeks after the end of lectures
1. Repetition:	until the beginning of the following lecture term
2. Repetition:	within one year after the date of the 1st repetition

3.5 INW_B0475 Statistics II (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Statistics II
Statistical Inference

General module
4. Version of 08.07.2022

Identification number:
WIW.03055.04

Subhead:
Statistical Inference

Learning objectives:
- Interpretation and applicaton of statistical methods, including tests and confidence intervals, using sample data
- Using sampling distribution theory for statistical inference about population structures
- Analyzing decision problems

Contents:
- Basic statistical decision analysis
- Sampling and sampling distributions, estimators and their distribution
- Point estimators and interval estimators
- Statistical tests for mean, proportions, and variance
- Tests for two-sample problems
- Basics of analysis of variance
- Contingency table analysis and basic non-parametric tests

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Christoph Wunder

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	3.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	3.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:
none

Eligible:
Statistics I, Mathematics I, Mathematics II

Length:
1 term

Teaching Period:
each winter term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	winter term
Reading and independent study	0	30	winter term
Exercises	2	30	winter term
Reading and independent study	0	45	winter term
Assessment preparation	0	15	winter term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	no later than 4 weeks after ending of lectures
1. Repetition:	until beginning of the following lecture term
2. Repetition:	within 1 year after the 1st Repetition

3.6 INW_B0476 Language III, Spanish I (for native speakers of German) (HoMe)

Module Number: INW_B0476
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 3 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Language III: Seminar (Spanish 1)	4	20
Language IV: Seminar (Spanish 2)	4	
Language V: Seminar (Spanish 3)	4	

Learning outcomes & competences

CEF Level A1:

- Being able to understand basic instructions and take part in a basic conversation on a predictable topic.

CEF Level A2:

- Being able to express requirements and opinions in a familiar context, understand straightforward information within a known area and write short messages with personal information

Content

- Basic topics for everyday situations, e.g. Giving personal information, Daily routine, Leisure activities, Shopping, Eating out, Health, Travelling and sightseeing, Customs and traditions;
- Basics of Grammar
- Facts about Spain, incl. geography, history, politics, culture, education

Teaching method

- Language classes

Participation requirements

- Only for native speakers of German

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination	**Examination level**
• Written and oral examination	• CEF A1 – A2

Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	• 1

Member of staff in charge of module

- Oda Brauer

Teaching staff

- TBA

Language

- Spanish

Literature

- N. X. Tort, E. Guerrero García, Universo.ele intensivo A1/ A2 -, Hueber Verlag, 2023
- Hildegard Rudolph, Spanisch - Die neue Powergrammatik; Hueber Verlag, 2018

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	**Seminar**	**Spanish I**	**4**	**60**	**60**	**0**	**30**	**150**
2	Seminar	Spanish II	4	60	60	0	30	150
3	Seminar	Spanish III	4	60	60	0	30	150
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	**None**	**Written and oral 40‘ / 15‘**
2	None	Written 100‘
3	None	Written and oral 40‘ / 15‘
Total module		
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	**native speakers of German**	**winter semester/summer semester**		**100**
2	native speakers of German	winter semester/summer semester		100
3	native speakers of German	winter semester/summer semester		100

3.7 INW_B0476 Language III, German as a Foreign Language I, B1 (for non-native speakers of German) (HoMe)

Module Number: INW_B0476
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 5 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
German as a Foreign Language I: Seminar	8	20
German as a Foreign Language II: Seminar	8	
German as a Foreign Language III: Seminar	8	

Learning outcomes & competences

CEF Level B1:

- Being able to express opinions on abstract/cultural matters in a limited way or offer advice within a known area.
- Being able to understand instructions or public announcements, routine information and articles, and the general meaning of non-routine information within a familiar area.
- Being able to write letters or e-mails or make notes at a meeting on predictable matters.

CEF Level B2:

- Being able to scan texts for relevant information and understand detailed instructions or advice as well as most correspondence, reports and factual literature about a fairly wide range of topics.
- Being able to follow or give a talk on a familiar topic.
- Being able to keep up a conversation in a job-related or academic context and pass on relevant messages.
- Being able to write letters/e-mails as well as essays on a fairly wide range of topics.

Content

- Facts about Germany, incl. geography, history, politics, culture, education
- University life in Germany and university-related vocabulary
- Topics at intermediate level (B1/B2), e.g. Applying for a job/internship, Work, Human relationships, Culture, Media, Science & Technology;
- Presentation techniques; Meetings and discussions
- Intermediate and advanced grammatical structures

Teaching method

- Language classes

Participation requirements

- Only for non-native speakers of German
- English skills at CEF Level B2 or equivalent

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination	**Examination level**
● Written and oral examination	● CEF B1 – B2
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	• 1

Member of staff in charge of module

- Oda Brauer

Teaching staff

- TBA

Language

- German (with English as language of instruction)

Literature

- Buscha/Szita, Spektrum Deutsch (B1+), Schubert 2018
- Braun (et al), Kompass DaF (B2) – Deutsch für Studium und Beruf, Klett 2020
- Fandrych/Tallowitz, Klipp und Klar - Übungsgrammatik für DaF A1-B1; Klett 2021
- Hering (et al), EM – Übungsgrammatik DaF, Hueber-Verlag 2006

Comments

- Course levels can be accessed according to prior knowledge of German

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	**Seminar**	**German as a Foreign Language I**	**8**	**120**	**15**		**15**	**150**
2	Seminar	German as a Foreign Language II	8	120	15		15	150
3	Seminar	German as a Foreign Language III	8	120	15		15	150
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	**None**	**Written examination 70 min.**
2	None	Oral examination 15 min.
3		
Total module		Written and oral examination 85 min.
Repeat examination	Winter/Summer semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	**Non-native speaker of German / English B2**	**Winter semester**	**Y/N**	**100**
2	Non-native speaker of German / English B2	Summer semester	Y/N	100
3	Non-native speaker of German / English B2	Winter semester	Y/N	100

4 Modules Semester 4

4.1 INW_B0477 Electrical Engineering (HoMe)

Module Number: INW_B0477
Workload PS: 150 h
Credits: 5 CP
Semester: Summer semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Lecture	2 SWS/30 h	40 students
Tutorial class incl. Laboratory class	2 SWS/30 h	4*10 students

Learning outcomes & competences

- Students know basic physical quantities, the physical equations and have knowledge of the SI units of measurement.
- The basic electrical quantities are known and how they are derived
- They are proficient in simplifying networks of sources and loads to form the basic circuit
- Calculate resistive networks based on mesh current analysis, branch current analysis, superposition, two-pole theory
- analysis of nonlinear resistive networks
- Know the terms and quantities of alternating current technology and how they are used in sinusoidal circuits
- Students will know the ac current behavior of linear devices
- They are able to apply and implement mathematical methods and procedures in solving electrical engineering problems
- The students have acquired the skills and theoretical knowledge to set up, carry out and evaluate pre-planned experiments

Content

- Moving charges
- Sources
- Current strength and current density
- Energy of a charge and potential
- Metallic conductors
- Ohm's law
- Temperature dependent resistors
- Direct current circuit
  - Current and voltage in a simple DC circuit
  - Kirchhoff's laws
  - Series connection and parallel connection of resistors
  - Resistor networks
  - Active and passive dipoles
  - Substitute current and voltage source
  - Voltage divider and current divider
  - Energy and power in the direct current circuit

- Power matching and efficiency
- Linear Networks
  - Network topology, nodes, meshes, branches, complete tree
  - Mesh current analysis
  - Branch current analysis
  - Superposition theorem
  - Two-pole theory
- The alternating current circuit
  - Sinusoidal time functions
  - Arithmetic mean value, effective value, rectified value
  - Ohmic resistance in the alternating current circuit
  - Capacitance in the alternating current circuit
  - Inductance in the alternating current circuit
  - Voltage and current relationships in the time domain
- Pointer diagrams

Teaching method

Lectures
Supervised tutorial classes

Participation requirements

- none

Use of the module (in other courses)

This course teaches the basics of DC networks based on active and passive two-poles using sources and resistors and their conversion. In addition, this course forms the basis for the AC behavior of components. Thus, the module is the prerequisite for further modules, such as Electrical Engineering 2, Electronics, Mechatronic Systems, Physics and related courses that require basic knowledge of networks.

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
• Written exam 120 min • Permitted aids: own collection of formulas	• Completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%; **3**: 0%	1

Member of staff in charge of module

Prof. Dr. Marco Franke

Teaching staff/Further responsible persons

Dr. Reza Dariani

Language

- English

Literature

- Satya Sai Srikant, Prakash Kumar Chaturvedi, Basic Electronics Engineering, Springer
- Sergey N. Makarov, Reinhold Ludwig, Stephen J. Bitar, Practical Electrical Engineering, Springer
- Charles A. Gross, Thaddeus A. Roppel, Fundamentals of Electrical Engineering, Crc Press Inc
- Lecture notes, formularies of the exercises

Comments

Media forms:

- Blackboard
- Beamer
- Exercises, worksheets

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Electrical Engineering	2	15		15		30
2	Tutorial class		1	30	30		90	90
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1		Written examination 120 min
2		none
3	Laboratory protocol	none
Total module	Laboratory protocol	Written examination 120 min
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	winter semester	no	100
2	none	winter semester	no	0
3	none	winter semester	yes	0

4.2 INW_B0478 Equipment in Process Engineering (HoMe)

Module Number: INW_B0478
Workload PS: 150 h
Credits: 5,0 CP
Semester: Summer semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	50
Module part LV2: **Tutorial class (ÜO)**	1 SWS	2 groups á 25 participants
Module part LV3: **Laboratory class (PO)**	1 SWS	10 groups á 5 participants

Learning outcomes & competences

- Understand and apply basics of process engineering activities like to construct PIDs (piping and instrumentation diagrams), compiling lists as the equipment-, piping, drives- und instruments-lists, work out the installation plan of the equipment, basics of time and cost management.
- Remember, understand the most important equipment in process technology as heat exchanger, cooling equipment, dryers, crystallization equipment, distillation equipment, filtration, centrifugal separation, mixing equipment, pumps, compressors, vacuum generation, vessels, reactors.
- Basics in process safety, basics of the required utilities (steam, compressed air, electrical current, inert gases) and knowledge of disposed waste streams.

Content

5. Engineering projects
5.1 Process engineering activities (PIDs)
5.2 Realization of a plant (Project management)
6. Equipment and systems
6.1 Heat exchange equipment (Introduction, air cool -, shell- and tube-, plate- and frame heat exchangers, condensers)
6.2 Evaporative cooling equipment (Introduction, design configurations, components and materials of construction)
6.3 Evaporating and drying equipment (Introduction, evaporators, drying equipment, crystallization)
6.4 Distillation equipment (Introduction, overview of distillation)
6.5 Mass separation equipment (Introduction, absorption and adsorption equipment, solvent extraction, reverse osmosis)
6.6 Mechanical separation equipment (Introduction, filtration equipment, sedimentation equipment, centrifugal separation equipment)
6.7 Mixing equipment (Introduction, mixing equipment)
6.8 Fluid flow engines (pumps, compressors, jet-pumps, vacuum generation)
6.9 Further select equipment (Vessels, reactors, piping, measurement, valves)
6.10 Process safety
6.11 Utilities and waste streams

Teaching method

- Lecture with power-point-presentations and self-study units
- Tutorial class
- Practical field work (laboratory class)

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
● Written examination (90 minutes) ● Prerequisite for admission to the written examination is the regular completion of the practical laboratory class	• completion of module
Calculation of the final grade of the module **1:** 100%; **2:** 0%; **3**: 0%	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- Prof. Dr. nat. techn. Ulf Schubert

Teaching staff/Further responsible persons

- M. Eng. Timo Stam-Creutz (laboratory engineer)

Language

- English

Literature

- M. Kleiber: Process Engineering, ISBN 978-3-11-031209-6, Walter de Gruyter 2016
- N.P. Cheremisinoff: Handbook of Chemical Processing Equipment, ISBN 0-7506-7126-2 Butterwoth-Heinemann 2000

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Process equipment and plant engineering	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Laboratory protocol	Written examination 90 min
2	none	none
3	none	none
Total module	Laboratory protocol	Written examination 90 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer semester	no	100
2	none	summer semester	no	0
3	none	summer semester	yes	0

4.3 INW_B0479 Process Control (HoMe)

Module Number: INW_B0479
Workload PS: 150 h
Credits: 5
Semester: summer semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: Lecture (VO)	2	50
Module part LV 2: Tutorial class (ÜO)	1	Max. 25 per group (→ max. 2 groups)
Module part LV 3: Laboratory class (PO)	1	Max. 12 per group (→ max. 4 groups)

Learning outcomes & competences

Students will gain basic knowledge about the automation of technical processes. They will be able to describe the functionality and application of open and closed loop control, including PID (proportional-integral-derivative) control design. Students will be introduced to technical systems of process control, including actuators and sensors, programmable logic controllers (PLCs) and distributed control systems (DCS).

Content

- Introduction to process control
- Sensors and signal processing
- Actuators in process control
- Open and closed loop control
- PID control design
- Programmable logic controllers (PLCs)
- Distributed control systems (PCS)

Teaching method

The main course will be done by lecturing with some demonstration elements and self-study units. Exercises and tutorials will focus on calculation and design examples. Practical course will include work in process control laboratories in small groups.

Participation requirements

Participation in practical courses is obligatory.

Use of the module (in other courses)

None

Conditions for the awarding of credit points

- Successful participation in practical course
- Successful passing of written exam

Examination	**Examination level**
Written examination	Completion of module

Calculation of the final grade of the module **LV1: 100%, LV2: 0%, LV3: 0%**	**Weighting of grade for calculation of final grade** 1
Member of staff in charge of module Prof. Dr.-Ing. Andreas Ortwein **Teaching staff/Further responsible persons** Prof. Dr. Stephan Schmidt Dipl.-Ing. (FH) Nico Rieske (laboratory engineer)	
Language • English	
Literature • Seborg, Dale E. et al.: Process Dynamics and Control. 4th Edition. Wiley, Hoboken (NJ). 2016. • Buckbee, George: Process Control Basics. International Society of Automation, 2021.	
Comments	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture		2	30	15	15	15	75
2	Tutorial class		1	15	22.5	0	0	37.5
3	Laboratory class		1	15	22.5	0	0	37.5
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Successful participation in laboratory class	Written examination (90 min)
2	None	None
3	none	None
Total module		Written exxamination (90 min)
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	None	Summer semester	no	100
2	None	Summer semester	No	0
3	None	Summer semester	Yes	0

4.4 INW_B0507 Supply Chain Management (HoMe)

Module Number: INW_B0507
Workload PS: 150 h
Credits: 5,0 CP
Semester: Summer semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	4 SWS	30

Learning outcomes & competences

- This course will provide students with knowledge related to formulate and use mathematical models to find the optimal solution to support decision making in Supply Chain Management. The course introduces optimization models and techniques with typical problems arising in Supply Chain Management, including linear programming, transportation models, network models and integer models.

- The module introduces optimization models in a deterministic environment, from which the optimal model can be used to make decisions in Supply Chain Management. After completing the module, students will be able to identify the characteristics of problems, identify appropriate models, and algorithms to solve business decision problems in Supply Chain Management.

1 Introduction to Supply Chain Management
1.1 Strategic Framework
1.2 Supply Chain Performance
2 Introduction to Operations Research
2.1 Linear Programming and extensions
2.1.1 General characteristics of linear programs
2.1.2 Simplex method
2.1.3 Two-Phase method
2.1.4 Special cases in the Simplex method
2.1.5 Interpretation of Simplex optimum tableaus
2.1.6 Integer and mixed integer programming
2.1.7 Examples and applications
2.2 Graph theory
2.2.1 General characteristics of graphs
2.2.2 Shortest path algorithms
2.2.3 Minimum spanning tree algorithms
3 Applications of Operations research in Supply Chain Management
3.1 Travelling salesman problem (TSP)
3.2 Vehicle routing planning (VRP)
3.3 Covering location problems (CLP)
3.4 Assignment problems (AP)

Teaching method

- Lecture with power-point-presentations and self-study units
- Exercises and tutorials

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
● Written examination	• completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%; **3**: 0%	1

Member of staff in charge of module

- Prof. Dr. Dirk Sackmann

Teaching staff/Further responsible persons

Language

- English

Literature

- Chopra, S., Meindl, P.: Supply Chain Management. Strategy, Planning & Operation, 7th ed., 2019
- Dantzig, G.B.: Linear Programming and Extensions, Rand Corporation, R-366-PR, 1963
- Hillier, F.S., Lieberman, G.J.: Introduction to Operations Research, 10th ed., New York, 2015
- Taha, H.A.: Operations Research: An Introduction, 8th ed., Upper Saddle River, 2007
- Wilson, R.J.: Introduction to Graph Theory, 4th ed., London, 1996

Comments

- **Total module:** none
- **Part module:** none

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Process equipment and plant engineering	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Laboratory protocol	Written examination 90 min
2	none	none
3	none	none
Total module	Laboratory protocol	Written examination 90 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer semester	no	100
2	none	summer semester	no	0
3	none	summer semester	yes	0

4.5 INW_B0480 Language IV, Spanish II (for native speakers of Germans) (HoMe)

Module Number: INW_B0480
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 3 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Language III: Seminar	4	20
Language IV: Seminar	4	
Language V: Seminar	4	

Learning outcomes & competences

CEF Level A1:

- Being able to understand basic instructions and take part in a basic conversation on a predictable topic.

CEF Level A2:

- Being able to express requirements and opinions in a familiar context, understand straightforward information within a known area and write short messages with personal information

Content

- Basic topics for everyday situations, e.g. Giving personal information, Daily routine, Leisure activities, Shopping, Eating out, Health, Travelling and sightseeing, Customs and traditions;
- Basics of Grammar
- Facts about Spain, incl. geography, history, politics, culture, education

Teaching method

- Language classes

Participation requirements

- Only for native speakers of German

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination	**Examination level**
• Written and oral examination	• CEF A1 – A2

Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	• 1

Member of staff in charge of module

- Oda Brauer

Teaching staff

- TBA

Language

- Spanish

Literature

- N. X. Tort, E. Guerrero García, Universo.ele intensivo A1/ A2 -, Hueber Verlag, 2023
- Hildegard Rudolph, Spanisch - Die neue Powergrammatik; Hueber Verlag, 2018

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	Spanish I	4	60	60	0	30	150
2	**Seminar**	**Spanish II**	**4**	**60**	**60**	**0**	**30**	**150**
3	Seminar	Spanish III	4	60	60	0	30	150
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	None	Written and oral 40‘ / 15‘
2	**None**	**Written 100‘**
3	None	Written and oral 40‘ / 15‘
Total module		
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	native speakers of German	winter semester/summer semester		100
2	**native speakers of German**	**winter semester/summer semester**		**100**
3	native speakers of German	winter semester/summer semester		100

4.6 INW_B0476 Language IV, German as a Foreign Language, B1-B2 (for non-native speakers of German) (HoMe)

Module Number: INW_B0476
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 5 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
German as a Foreign Language I: Seminar	8	20
German as a Foreign Language II: Seminar	8	
German as a Foreign Language III: Seminar	8	

Learning outcomes & competences

CEF Level B1:

- Being able to express opinions on abstract/cultural matters in a limited way or offer advice within a known area.
- Being able to understand instructions or public announcements, routine information and articles, and the general meaning of non-routine information within a familiar area.
- Being able to write letters or e-mails or make notes at a meeting on predictable matters.

CEF Level B2:

- Being able to scan texts for relevant information and understand detailed instructions or advice as well as most correspondence, reports and factual literature about a fairly wide range of topics.
- Being able to follow or give a talk on a familiar topic.
- Being able to keep up a conversation in a job-related or academic context and pass on relevant messages.
- Being able to write letters/e-mails as well as essays on a fairly wide range of topics.

Content

- Facts about Germany, incl. geography, history, politics, culture, education
- University life in Germany and university-related vocabulary
- Topics at intermediate level (B1/B2), e.g. Applying for a job/internship, Work, Human relationships, Culture, Media, Science & Technology;
- Presentation techniques; Meetings and discussions
- Intermediate and advanced grammatical structures

Teaching method

- Language classes

Participation requirements

- Only for non-native speakers of German
- English skills at CEF Level B2 or equivalent

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination	**Examination level**
● Written and oral examination	● CEF B1 – B2
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	• 1

Member of staff in charge of module

- Oda Brauer

Teaching staff

- TBA

Language

- German (with English as language of instruction)

Literature

- Buscha/Szita, Spektrum Deutsch (B1+), Schubert 2018
- Braun (et al), Kompass DaF (B2) – Deutsch für Studium und Beruf, Klett 2020
- Fandrych/Tallowitz, Klipp und Klar - Übungsgrammatik für DaF A1-B1; Klett 2021
- Hering (et al), EM – Übungsgrammatik DaF, Hueber-Verlag 2006

Comments

- Course levels can be accessed according to prior knowledge of German

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	German as a Foreign Language I	8	120	15		15	150
2	**Seminar**	**German as a Foreign Language II**	**8**	**120**	**15**		**15**	**150**
3	Seminar	German as a Foreign Language III	8	120	15		15	150
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	None	Written examination 70 min.
2	**None**	**Oral examination 15 min.**
3		
Total module		Written and oral examination 85 min.
Repeat examination	Winter/Summer semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	Non-native speaker of German / English B2	Winter semester	Y/N	100
2	**Non-native speaker of German / English B2**	**Summer semester**	**Y/N**	**100**
3	Non-native speaker of German / English B2	Winter semester	Y/N	100

5 Modules Semester 5

5.1 INW_B0491 Sustainable Energy Supply (HoMe)

Module Number: INW_B0491
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	25
Module part LV2: **Tutorial class (ÜO)**	1 SWS	2-3 groups á 10-13 participants
Module part LV3: **Laboratory class (PO)**	1 SWS	5-6 groups á 4-5 participants

Learning outcomes & competences

- Knowledge about interaction of bubbles and economic crises
- implication to German and worldwide activities in the field of energy supply
- analyzing of the current state concerning energy supply of a company
- creating of strategies for fitting the energy supply to the needs (personal, operational, social)
- basics of macroeconomics
- basics about technologies of renewable energies

Content

7. sustainability
7.1 modeling of macroeconomic states
7.2 bubbles and economic crises
7.3 strategies for energy supply
8. renewable energies
8.1 different kinds of renewable energies
8.2 concept for sustainable energy supply and way to sustainable energy supply
8.3 photovoltaic
8.4 solar thermal systems
8.5 energy of moving fluids – wind and water energies
8.6 biomass
8.7 heat pumps
9. grid stabilization
9.1 frequency, load and offer
9.2 flexible user and producer, energy exchange market
10. strategies for local systems / countries
10.1 social frame condition for the promotion of investments into sustainable energies
10.2strategies for student home countries

Teaching method

- Lecture with power-point-presentations and self-study units
- Exercises and tutorials
- Practical part

- student presentation

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
• Written examination • Prerequisite for admission to the written examination is the regular completion of the practical laboratory class	• completion of module
Calculation of the final grade of the module **1:** 100%; **2:** 0%; **3**: 0%	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- Prof. Dr. Ing. Dietmar Bendix

Teaching staff/Further responsible persons

- Carsten Sichmund (laboratory engineer)

Language

- English

Literature

Mentel, Grzegorz; Majewski, Sebastian, Energy Policy, Regulation and Sustainable Development; Multidisciplinary Digital Publishing Institute, 2023, 978-3-0365-6800-3

Chen, Wei-Hsin; Culaba, Alvin B.; Ubando, Aristotle T.; Lim, Steven; Energy Development for Sustainability, Multidisciplinary Digital Publishing Institute, 2022, 978-3-0365-4113-6

Comments

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Sustainable Energy Supply	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Laboratory access check	written examination 120 min
2	none	none
3	none	none
Total module	Laboratory protocol	Written examination 120 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	winter semester	no	100
2	none	winter semester	no	0
3	none	winter semester	yes	0

5.2 WW_B0100 International Logistics (HoMe)

Module Number: WW_B0100
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 Semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	4 SWS	30

Learning outcomes & competences

- This course will provide students with knowledge related to planning problems in international logistics.
- The course will focus on case studies in the field of international logistics, actually the course is devoted to Supply Chain Management in Food Supply Chains.
- The students will do their own literature review. They become ready to prepare scientific papers in small groups.

International Logistics
1 Key Terms and Concepts
2 Political Events and Logistics Trends in International Logistics
3 Food Supply Chain Management
3.1 Introduction
3.2 Specific Challenges
3.3 Challenges in Food Supply Chain Management
3.4 Asymmetric Information in Food Supply Chain Management
4 China´s Belt and Road Initiative
5 Literature Review
5.1 Material Collection
5.2 Descriptive Analysis
5.3 Category Selection
5.4 Material Evaluation
5.5 Text Minining

Teaching method

- Lecture with power-point-presentations and self-study units
- Exercises and tutorials

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
● Scientific paper	• completion of module
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
1: 100%; **2:** 0%; **3**: 0%	1

Member of staff in charge of module

- Prof. Dr. Dirk Sackmann

Teaching staff/Further responsible persons

Language

- English

Literature

- Chopra, S., Meindl, P.: Supply Chain Management. Strategy, Planning & Operation, 7th ed., 2019

Comments

- **Total module:** none
- **Part module:** none

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	International Logistics	4	60	60		30	150
2								0
3								0
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	none	Scientific paper
2	none	none
3	none	none
Total module	none	Scientific paper
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer semester	no	100
2				
3				

5.3 INW_B0490 Language V, Spanish III (for native speakers of German) (HoMe)

Module Number: INW_B0490
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 3 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Language III: Seminar	4	20
Language IV: Seminar	4	
Language V: Seminar	4	

Learning outcomes & competences

CEF Level A1:

- Being able to understand basic instructions and take part in a basic conversation on a predictable topic.

CEF Level A2:

- Being able to express requirements and opinions in a familiar context, understand straightforward information within a known area and write short messages with personal information

Content

- Basic topics for everyday situations, e.g. Giving personal information, Daily routine, Leisure activities, Shopping, Eating out, Health, Travelling and sightseeing, Customs and traditions;
- Basics of Grammar
- Facts about Spain, incl. geography, history, politics, culture, education

Teaching method

- Language classes

Participation requirements

- Only for native speakers of German

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination	**Examination level**
• Written and oral examination	• CEF A1 – A2

Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	• 1
Member of staff in charge of module • Oda Brauer **Teaching staff** • TBA	
Language • Spanish	
Literature • N. X. Tort, E. Guerrero García, Universo.ele intensivo A1/ A2 -, Hueber Verlag, 2023 • Hildegard Rudolph, Spanisch - Die neue Powergrammatik; Hueber Verlag, 2018	
Comments	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	Spanish I	4	60	60	0	30	150
2	Seminar	Spanish II	4	60	60	0	30	150
3	**Seminar**	**Spanish III**	**4**	**60**	**60**	**0**	**30**	**150**
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	None	Written and oral 40‘ / 15‘
2	None	Written 100‘
3	**None**	**Written and oral 40‘ / 15‘**
Total module		
Repeat examination		

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	native speakers of German	**winter semester/summer semester**		**100**
2	native speakers of German	winter semester/summer semester		100
3	**native speakers of German**	**winter semester/summer semester**		**100**

5.4 INW_B0490 Language V, German as a Foreign Language, B2 (for non-native speakers of German) (HoMe)

Module Number: INW_B0490
Workload PS: 150 hrs per semester
Credits: 5.0 per semester
Semester: Winter / Summer
Duration: 5 semesters (in total)

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
German as a Foreign Language I: Seminar	8	20
German as a Foreign Language II: Seminar	8	
German as a Foreign Language III: Seminar	8	

Learning outcomes & competences

CEF Level B1:

- Being able to express opinions on abstract/cultural matters in a limited way or offer advice within a known area.
- Being able to understand instructions or public announcements, routine information and articles, and the general meaning of non-routine information within a familiar area.
- Being able to write letters or e-mails or make notes at a meeting on predictable matters.

CEF Level B2:

- Being able to scan texts for relevant information and understand detailed instructions or advice as well as most correspondence, reports and factual literature about a fairly wide range of topics.
- Being able to follow or give a talk on a familiar topic.
- Being able to keep up a conversation in a job-related or academic context and pass on relevant messages.
- Being able to write letters/e-mails as well as essays on a fairly wide range of topics.

Content

- Facts about Germany, incl. geography, history, politics, culture, education
- University life in Germany and university-related vocabulary
- Topics at intermediate level (B1/B2), e.g. Applying for a job/internship, Work, Human relationships, Culture, Media, Science & Technology;
- Presentation techniques; Meetings and discussions
- Intermediate and advanced grammatical structures

Teaching method

- Language classes

Participation requirements

- Only for non-native speakers of German
- English skills at CEF Level B2 or equivalent

Use of the module (in other courses)

- None

Conditions for awarding credit points

- Passing the examinations (each semester)

Examination	**Examination level**
● Written and oral examination	● CEF B1 – B2
Calculation of the final grade of the module	**Weighting of grade for calculation of final grade**
• 100%	• 1

Member of staff in charge of module

- Oda Brauer

Teaching staff

- TBA

Language

- German (with English as language of instruction)

Literature

- Buscha/Szita, Spektrum Deutsch (B1+), Schubert 2018
- Braun (et al), Kompass DaF (B2) – Deutsch für Studium und Beruf, Klett 2020
- Fandrych/Tallowitz, Klipp und Klar - Übungsgrammatik für DaF A1-B1; Klett 2021
- Hering (et al), EM – Übungsgrammatik DaF, Hueber-Verlag 2006

Comments

- Course levels can be accessed according to prior knowledge of German

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Seminar	German as a Foreign Language I	8	120	15		15	150
2	Seminar	German as a Foreign Language II	8	120	15		15	150
3	**Seminar**	**German as a Foreign Language III**	**8**	**120**	**15**		**15**	**150**
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	None	Written examination 70 min.
2	None	Oral examination 15 min.
3	None	Written and oral examination 85 min.
Total module		
Repeat examination	Winter/Summer semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	Non-native speaker of German / English B2	Winter semester	Y/N	100
2	Non-native speaker of German / English B2	Summer semester	Y/N	100
3	**Non-native speaker of German / English B2**	**Winter semester**	**Y/N**	**100**

6 Modules Semester 6

6.1 INW_B0485 Internship (HoMe)

Module Number: INW_B0485
Workload PS: 450 h
Credits: 15,0 CP
Semester: Summer and winter semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: Internship	0 SWS	unlimitied

Learning outcomes & competences

- LEARNING OUTCOMES
  The students know the operational processes in a company or an application-oriented research institution. You know how different employees, groups and departments work together and understand the mechanisms necessary for everything to run smoothly.
- COMPETENCES
  The students experience the creation of a company performance and have the necessary social and professional skills in working with colleagues and superiors.

Content

Operational processes
Collaboration between different people/groups
Creation of a product/an operationally relevant service

Teaching method

- Lecture
- Practical experience

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: Internship report

Examination • Internship report	**Examination level** • completion of module
Calculation of the final grade of the module **1:** 0%; **2:** 0%; **3**: 0%	**Weighting of grade for calculation of final grade** 0 (participated with success)
Member of staff in charge of module • Verena Neumann (Course coordinator Bachelor Engineering and Management) **Teaching staff/Further responsible persons** • all professors at the university	
Language • English	
Literature • none	
Comments	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Internship	Internship	0	300		100	50	450
2								
3								
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	none	Internship report
2		
3		
Total module		Internship report
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer and winter semester	yes	100
2				0
3				0

6.2 K176_23_BP Bachelor Dissertation including Colloquium (HoMe)

Module Number: K176_23_BP
Workload PS: 450 h
Credits: 15,0 CP
Semester: Summer and winter semester
Duration: 1 semester

Course structure	**SWS (semester periods per week [hours])**	**Max. number of participants**
Module part LV1: Bachelor Thesis	0 SWS	Unlimitied
Module part LV2: Colloquium	0 SWS	Unlimitied

Learning outcomes & competences

- LEARNING OUTCOMES
  The purpose of the bachelor´s thesis is to give students an opportunity – by working in depth with a limited subject area – to independently demonstrate their ability to formulate a business-related topic, select relevant literature, process data, conduct analyses, apply methodologies, make critical assessments and present answers to questions raised in the problem statement
- COMPETENCES

The thesis serves the following purposes:

- To further develop the ability to give an independent, systematic and clear treatment of a certain topic.
- To train the ability to independently identify and analyze relevant problems
- To solve a practical problem by a systematic use of an appropriate choice of theory and methodologies.
- To train the ability to independently acquire and handle academic knowledge through independent studies of relevant literature, and to cultivate the ability to evaluate and briefly account for the central elements in a large literature base

Content

self-study

Teaching method

- support from supervisor
- self-study
- if applicable: practical experience

Participation requirements

- Min. 140 CPs successfully passed

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

Total module: pass successfully the Bachelor Thesis and the Colloquium

Examination ● Bachelor Thesis ● Colloquium	**Examination level** • completion of module
Calculation of the final grade of the module **1:** 66,6%; **2:** 33,3%; **3**: 0%	**Weighting of grade for calculation of final grade** 3/33 (15 CPs/165 CPs total)
Member of staff in charge of module ● Verena Neumann (Course coordinator Bachelor Engineering and Management) **Teaching staff/Further responsible persons** • all professors at the university	
Language ● English	
Literature ● How To Write Coursework and Exam Essays, ISBN: 9781848034686, 1848034687, Februar 2014, E-Book, Publisher: Little, Brown Book Group, Language: Englisch, Author: Brendan Hennessy	
Comments	

Appendix: Assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Bachelor Thesis	Bachelor Dissertation	0			300		300
2	Colloquium						150	150
3								
Workload modules in total								**450**

Examination	Pre-exam achievements	Type of examination
1	none	Bachelor thesie
2	none	Colloquium (presentation and oral exam)
3	none	none
Total module		Bachelor Thesis and colloquium
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer and winter semester	yes	66,6
2	none	summer and winter semester	yes	33,3
3				0

7 Compulsory Elective Modules, Study Area „Engineering“, 5. Semester

7.1 INW_B0503 Biotechnology (HoMe)

Module Number: INW_B0503
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 semester

Course structure	**SWS**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	2 SWS	50
Module part LV2: **Tutorial class (ÜO)**	1 SWS	2 groups á 25 participants
Module part LV3: **Laboratory class (PO)**	1 SWS	10 groups á 5 participants

Learning outcomes & competences

- Students have an overview of microbiology and biotechnology and the diverse fields of application
- Students are familiar with important groups of microorganisms and under microbial systems
- Students gain insight into microbial material conversions and their possible applications.
- Students know the importance of microbial processes for technical applications, such as the role of biofilms in technical systems.
- Students are able to select microbial processes for technical applications, to optimise simple fermentation processes and know measures to avoid processes such as biofouling.

Content

- Introduction to microbiology and biotechnology
- Essentials of general microbiology (knowledge of basic terms, techniques and important microorganisms in applied microbiology as well as the various processes of energy production such as aerobic, anaerobic respiration, fermentation, photosynthesis) and taxonomic classification of microorganisms
- Isolation, identification and cultivation of bacteria and principles of cultivation (role of culture medium, preculture and cultivation conditions and influence of process parameters)
- Microbial growth and mechanisms of metabolism and energy conversion, electron transport under anaerobic conditions, special fermentations
- Structure and role of enzymes and enzyme kinetics
- Genetic engineering
- Important macromolecules and their function
- Biocorrosion
- Application examples, in particular for the development of environmentally friendly and sustainable technologies (environmental biotechnology / green engineering)

Teaching method

- Lecture with power-point-presentations and self-study units
- Tutorial class
- Practical field work (laboratory class)

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
• Written examination (90 minutes) or oral examination (20 minutes) • Prerequisite for admission to the written examination is the regular completion of the practical laboratory class	• completion of module
Calculation of the final grade of the module **1:** 100%; **2:** 0%; **3**: 0%	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- Prof. Dr-Ing. Hilke Würdemann

Teaching staff/Further responsible persons

- M. Eng. Anja Striegel (laboratory engineer)

Language

- English

Literature

- Reinhard Renneberg: Biotechnology for Beginners. 3rd edition. Elsevier LTD, Oxford.2023

Comments

- **Total module:** none
- **Part module:** none

Appendix: assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Biotech-nology	2	30	30		30	90
2	Tutorial class		1	15		15		30
3	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	Laboratory protocol	Written examination 90 min
2	none	none
3	none	none
Total module	Laboratory protocol	Written examination 90 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	summer semester	no	100
2	none	summer semester	no	0
3	none	summer semester	yes	0

7.2 INW_B0504 Environmental Engineering (HoMe)

Module Number: INW_B0504
Workload PS: 150 h
Credits: 5,0 CP
Semester: Winter semester
Duration: 1 semester

Course structure	**SWS**	**Max. number of participants**
Module part LV1: **Lecture (VO)**	3 SWS	50
Module part LV2: **Laboratory class (PO)**	1 SWS	10 groups á 5 participants

Learning outcomes & competences

- Students understand and apply essential contents of environmental engineering like water and wastewater technology, remediation of contaminated sites as well as suitable methods of air pollution control technology, noise reduction technology and waste/recycling technology.
- Students know the structure and the relevant technical components of e.g. sewage treatment plants, flue gas cleaning plants, noise protection plants as well as landfills, waste incineration and recycling plants.
- Students understand the influence of environmental technologies on the reduction of environmental emissions and are also able to evaluate this in a basic way.
- students know the importance of environmental protection as a challenge for engineers and scientists.
- Students know the most relevant legal regulations and can apply them to the different plants/technologies.

Content

1. problems of wastewater treatment, basics of the construction and design of wastewater treatment plants as well as methods for sewage sludge treatment
2. contaminated site treatment including relevant pollutants for soil and groundwater, investigation procedures, treatment technologies of soil contamination and technical securing and decontamination measures
3. collection and transportation of waste and various processes for waste recovery and disposal (include mechanical waste treatment and subsequent recycling processes, biological treatment of organic residues, thermal treatment of residual waste and high-calorific waste fractions, and technologies for the safe landfilling of wastes
4. characterization of the condition of exhaust air streams and cleaning of exhaust air and flue gas stream (in particular, the methods and technologies for particle separation and removal of gaseous components from exhaust air as well as the main components of flue gas cleaning systems and the combined processes for exhaust air cleaning
5. characterization of noise, measurement and assessment of airborne noise, evaluation of noise sources, as well methods of airborne noise reduction, structure-borne noise reduction and structure-borne noise attenuation

Teaching methods

- Lectures with power-point-presentations and short calculation exercises
- laboratory work

Participation requirements

- none

Use of the module (in other courses)

- none

Conditions for the awarding of credit points

- Total module: passed examination

Examination	**Examination level**
• Written examination (90 minutes) • Prerequisite for admission to the written examination is the regular completion of the practical laboratory class	• completion of module
Calculation of the final grade of the module **1:** 70%; **2:** 30%;	**Weighting of grade for calculation of final grade** 1

Member of staff in charge of module

- Prof. Dr.-Ing. Christoph Wünsch

Teaching staff/Further responsible persons

- Dipl.-Ing. André Diener (laboratory engineer)
- Dipl.-Ing. Anja Striegel (laboratory engineer)

Language

- English

Literature

- Need to be specified

Comments

- Total module: none
- Part module: none

Appendix: assessment details

Module units	Course structure	Course title	Semester hours (SWS)	Workload in attendance	Workload preparation/ follow-up	Workload independent study	Workload examination incl. preparation	Workload in total
1	Lecture	Environmental Engineering	3	40	40		40	120
2	Laboratory class		1	15		15		30
Workload modules in total								**150**

Examination	Pre-exam achievements	Type of examination
1	successful completion of the laboratory class	written examination 90 min
2	none	none
Total module	successful completion of the laboratory class	written examination 90 min
Repeat examination	1 time per semester	

Regulations	Participation requirements	Annual course choice (winter semester/summer semester)	Obligation to attend	Weighting of module grade in %
1	none	winter semester	no	70
2	none	winter semester	yes	30

7.3 INW_B0505 Plant Engineering Project (HoMe)

in progress

7.4 INW_B0506 CAD/Mechanical Design (HoMe)

in progress

8 Compulsory Elective Modules, Study Area „Business and Economics“, 4. and 5. Semester

8.1 INW_B0492 Businessplan Seminar (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Businessplan Seminar

General module

2. Version of 20.01.2023

Identification number:
WIW.06816.02

Learning objectives:

- learning relevant know how for starting an enterprise
- developing a realizable business idea in a group
- developing capabilities, such as working in a team, dealing with conflicts and presenting a business idea
- improving the ability to take decisions and social capabilities

Contents:

- The module should enable students to know the elements of a business plan and realize a business idea.
- The focus of this modules lies on practical and applicable knowledge.
- Important content includes developing of a realizable business idea, understanding business functions, such as marketing, organization, HR management, taxes, financial planning.

Module provider (effective from 14.11.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Julia Müller-Seeger

This module belongs to (effective from 21.01.2020):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Studies 180 CP from WS 2020	6.	elective module	graded	5/160
Bachelor	Economics 180 CP from WS 2020	6.	elective module	graded	5/165
Bachelor	Business Economics 180 CP from WS 2020	6.	elective module	graded	5/165
Bachelor	Business Information Systems 180 CP from WS 2020	6.	elective module	graded	5/165
Bachelor (Dual Subject)	Fundamental Economics and Management 60 CP from WS 2020	6.	elective module	graded	5/55
Bachelor (Dual Subject)	Economics and Management 120 CP from WS 2020	6.	elective module	graded	5/105

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:

With a number of interested students that does not fit with the intense supervision in the module, a selection of participants will be conducted based on: a) a positive grade of "Einführung in die Betriebswirtschaftslehre" or "Principles of Management" and (for Bachelor's degree program "Engineering and Management" is valid: proof of basic knowledge in business administration) b) random selection via Stud.IP.

Eligible:

none

Length:

1 term

Teaching Period:

each summer term

Student's work load:

150 Hours

Credit points:

5 CP

Language:

German/English

Module components:

Learning strategies	WCH	Hours	Semester
Seminar	2	30	summer term
Written paper	0	75	summer term
Preparation of presentation	0	45	summer term

Coursework:

- none

Preparatory work:

- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written paper	Written paper	Written paper	50%
Presentation	Presentation	Presentation	50%

Dates of final examinations:

1. Date:	during the term
1. Repetition:	by arrangement
2. Repetition:	within one year after the date of the 1st repetition

8.2 INW_B0493 Data Science I (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Data Science

General module

1. Version of 01.07.2021

Identification number:
WIW.07600.01

Learning objectives:

- Students can explain the role of data in the scientific method and how other modules on their curriculum tie into the processing of data.
- Students can differentiate between different types of data, identify limitations of data sets and infer feasible modelling approaches.
- Students can collect, transform and clean data from multiple sources.
- Students can explain core principles of data visualization and visualize different types of data.
- Students can explain the mathematics and intuition of introductory modelling techniques and apply the latter to real data sets.
- Students become proficient in processing data with R (or Python).

Contents:

- The role of data in science
- Data types and data imperfections
- Collection of data from various sources
- Data manipulation/cleaning
- Visualization principles and techniques
- Introductory modelling techniques
- Use of R (or Python)

Module provider (effective from 01.07.2021):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Dr. Klaus Schmerler

This module belongs to (effective from 17.01.2022):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Studies 180 CP from WS 2020	5.	elective module	graded	5/160
Bachelor	Economics 180 CP from WS 2020	5.	elective module	graded	5/165
Bachelor	Business Economics 180 CP from WS 2020	5.	elective module	graded	5/165
Bachelor	Business Information Systems 180 CP from WS 2020	5.	elective module	graded	5/165

WS ... winter term
SS ... summer term

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor (Dual Subject)	Fundamental Economics and Management 60 CP from WS 2020	5.	elective module	graded	5/55
Bachelor (Dual Subject)	Economics and Management 120 CP from WS 2020	5.	elective module	graded	5/105

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:

none

Eligible:

- Statistik I und II bzw. Statistics I und II - Mathematik I und II oder Mathematics I und II

Length:

1 term

Teaching Period:

each winter term

Student's work load:

150 Hours

Credit points:

5 CP

Language:

English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	winter term
Exercises	2	30	winter term
Reading and independent study	0	30	winter term
Project work	0	45	winter term
Assessment preparation	0	15	winter term

Coursework:

- none

Preparatory work:

- none

Assessment details:

No	Final examination	1. Repetition	2. Repetition	Weighting
1	Project work	Project work	Project work	60%
2	Oral exam	Oral exam	Oral exam	40%

Dates of final examinations no. 1:

1. Date: during the term
1. Repetition: by arrangement
2. Repetition: within one year after the 1st repetion

Dates of final examinations no. 2:

1. Date: no later than 4 weeks after end of lectures
1. Repetition: until the begining of the following term
2. Repetition: within one year after the 1st repetion

8.3 INW_B0494 Data Science II (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Data Science II

General module

2. Version of 20.01.2023

Identification number:

WIW.07710.02

Learning objectives:

- Students can explain the notion of statistical learning and techniques to ensure generalization. They can further employ such techniques to perform model selection.
- Students can explain the intuition and understand the mathematics of intermediate modelling techniques, and apply the latter to real data sets.
- Students can relate different modelling techniques conceptually in the context of empirical loss minimization.
- Students understand and can explain the role of feature engineering
- Students can explain fundamental estimation techniques.
- Students can process data with R at a high level of proficiency.

Contents:

- Introductory estimation techniques
- Intermediate modelling techniques
- Feature engineering
- Feature selection
- Model evaluation and selection
- Intermediate visualization techniques

Module provider (effective from 12.01.2023):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Dr. Klaus Schmerler

This module belongs to (effective from 17.01.2022):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Studies 180 CP from WS 2020	6.	elective module	graded	5/160
Bachelor	Economics 180 CP from WS 2020	6.	elective module	graded	5/165
Bachelor	Business Economics 180 CP from WS 2020	6.	elective module	graded	5/165
Bachelor	Business Information Systems 180 CP from WS 2020	6.	elective module	graded	5/165

WS ... winter term
SS ... summer term

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor (Dual Subject)	Fundamental Economics and Management 60 CP from WS 2020	6.	elective module	graded	5/55
Bachelor (Dual Subject)	Economics and Management 120 CP from WS 2020	6.	elective module	graded	5/105

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:

none

Eligible:

Statistik I resp. Statistics I; Mathematik I and II resp. Mathematics I and II; Data Science I; Previous knowledge in R

Length:

1 term

Teaching Period:

each summer term

Student's work load:

150 Hours

Credit points:

5 CP

Language:

English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	summer term
Exercises	2	30	summer term
Reading and independent study	0	30	summer term
Project work	0	45	summer term
Preparation presentation	0	15	summer term

Coursework:

- none

Preparatory work:

- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Project work	Project work	Project work	60%
Presentation and discussion	Presentation and discussion	Presentation and discussion	40%

Dates of final examinations:

1. Date: during the term
1. Repetition: by arrangement
2. Repetition: within one year after the date of the 1st repetion

8.4 INW_B0497 Intermediate Microeconomics (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Intermediate Microeconomics

General module

4. Version of 14.07.2022

Identification number:
WIW.04842.04

Learning objectives:
- Knowledge of economic analysis in the presence of rational behavior
- Ability to apply the economic market analysis in a problem-oriented way
- Developing competence in analytical methods

Contents:
- Stakeholder analysis: demand and supply behaviour on goods markets
- Market Analysis: Analysis of market interactions and resulting market structures (Goods market, labour market, capital market, insurance market)
- Institutional Analysis

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Ingo Pies

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	2.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	2.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:
Mandatory:
none
Eligible:
none

Length:
1 term

Teaching Period:
each summer term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Follow-up	0	30	summer term
Taught session	2	30	summer term
Exercises	2	30	summer term
Reading and independent study	0	45	summer term
Assessment preparation	0	15	summer term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	no later than 4 weeks after the end of lectures
1. Repetition:	until the beginning of the following lecture term
2. Repetition:	within one year after the date of the 1st repetition

8.5 INW_B0498 Introductory Econometrics (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Introductory Econometrics

General module

3. Version of 08.07.2022

Identification number:
WIW.06219.03

Learning objectives:

- Describing basic econometric methods
- Using the ordinary least squares estimator
- Testing hypotheses and interpreting test result
- Applying econometric methods using a statistical software package

Contents:

- The simple linear regression model
- The multiple regression model
- Hypothesis testing and confidence intervals
- OLS asymptotics
- Binary (dummy) variables

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Christoph Wunder

This module belongs to (effective from 21.01.2020):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Studies 180 CP from SS 2016	4.	elective module	graded	5/170
Bachelor (Dual Subject)	Economics and Management 120 CP from SS 2016	4.	elective module	graded	5/110
Bachelor (Dual Subject)	Fundamental Economics and Management 60 CP from SS 2016	4.	elective module	graded	5/60
Bachelor	Business Economics 180 CP from SS 2016	4.	compulsory module	graded	5/160
Bachelor	Business Studies 180 CP from WS 2020	4.	compulsory module	graded	5/160
Bachelor	Economics 180 CP from WS 2020	4.	compulsory module	graded	5/165
Bachelor	Business Economics 180 CP from WS 2020	4.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Information Systems 180 CP from WS 2020	4.	elective module	graded	5/165
Bachelor (Dual Subject)	Fundamental Economics and Management 60 CP from WS 2020	4.	elective module	graded	5/55
Bachelor (Dual Subject)	Economics and Management 120 CP from WS 2020	4.	elective module	graded	5/105

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:

none

Eligible:

profound knowledge in statistical methods and economical concepts

Length:

1 term

Teaching Period:

each summer term

Student's work load:

150 Hours

Credit points:

5 CP

Language:

English

Module components:

Learning strategies	WCH	Hours	Semester
Taught session	2	30	summer term
Reading and independent study	0	40	summer term
Exercises	2	30	summer term
Reading and independent study	0	35	summer term
Assessment preparation	0	15	summer term

Coursework:

- none

Preparatory work:

- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date: no later than 4 weeks after end of lectures
1. Repetition: until the beginning of the following lecture term
2. Repetition: within one year after the first repetition

8.6 INW_B0500 Principles of Economics (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Principles of Economics

General module

4. Version of 27.07.2022

Identification number:
WIW.04841.04

Learning objectives:
- This course aims to give students an understanding of fundamental economic concepts and their application to the analysis of a broad range of economic and societal issues. It touches on various microeconomic and macroeconomic issues.

Contents:
- Fundamental economic principles and trade
- Supply and demand
- Markets and welfare considerations
- Policies and taxes
- Basic firm behavior and market structures

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	PD Dr. Mirko Titze

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	1.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	1.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:
Mandatory:
none
Eligible:
none

Length:
1 term

Teaching Period:
each winter term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Assessment preparation	0	45	winter term
Taught session	2	30	winter term
Reading and independent study	0	45	winter term
Exercises	2	30	winter term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date:	no later than 4 weeks after the end of lectures
1. Repetition:	until the beginning of the following lecture term
2. Repetition:	within one year after the date of the 1st repetition

References:
Das Kontaktstudium kann bis zu 4 SWS betragen. Bei geringerem Kontaktstudium wird das Selbststudium entsprechend angepasst.

8.7 INW_B0501 Production and Logistics (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Production and Logistics

General module

4. Version of 27.07.2022

Identification number:
WIW.04856.04

Learning objectives:

Students...
- understand the main principles of production and logistics
- are able to explain quantitative models and methods used for planning of production and logistics processes
- assess strategic, tactical and operational policies in the production range of industrial and service companies

Contents:
- Production and logistics systems
- Master production planning
- Material requirement and utilization planning
- Lot sizing and production scheduling
- Location and layout planning
- Inventory management, transportation planning and routing

Module provider (effective from 06.07.2022):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Christian Bierwirth

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	3.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	3.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:

Mandatory:
none

Eligible:
Modules: Mathematics I, Statistics I

Length:
1 term

Teaching Period:
each winter term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Assessment preparation	0	20	winter term
Taught session	2	30	winter term
Exercises	2	30	winter term
Reading and independent study (Taught session)	0	30	winter term
Reading and independent study (Exercises)	0	40	winter term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	Written Exam / Open-Book-Exam / Take-Home-Exam / Oral Exam	100%

Dates of final examinations:

1. Date: not later than 4 weeks after the end of lectures
1. Repetition: until the beginning of the following lecture term
2. Repetition: within one year after the date of the 1st repetition

8.8 INW_B0502 Principles of Management (MLU)

MARTIN-LUTHER-UNIVERSITÄT
HALLE-WITTENBERG

Principles of Management

General module

4. Version of 29.01.2020

Identification number:
WIW.04855.04

Learning objectives:
- Understanding for subject area of strategic management
- Knowledge of different strategic principles, methods and tools
- Ability to analyse the external and internal environments of companies
- Capability to analyze, discuss and develop solutions for business problems

Contents:
- Characterization of strategic management as a field in business studies
- Fundamentals of the process of strategic management and its influencing factors
- Application of principles, methods and tools to specific business cases

Module provider (effective from 15.01.2020):

Faculty	Department	Responsible person
Juristische und Wirtschaftswissenschaftliche Fakultät	Wirtschaftswissenschaftlicher Bereich	Prof. Dr. Julia Müller-Seeger

This module belongs to (effective from 16.12.2019):

Degree	Study program (Credit points) (Credit points)	Rec. semester	Characterization of the module	Grading	Module contribution to final grade
Bachelor	Business Economics 180 CP from SS 2016	1.	compulsory module	graded	5/160
Bachelor	Business Economics 180 CP from WS 2020	1.	compulsory module	graded	5/165

WS ... winter term
SS ... summer term

Prerequisites:
Mandatory:
none
Eligible:
none

Length:
1 term

Teaching Period:
each winter term

Student's work load:
150 Hours

Credit points:
5 CP

Language:
English

Module components:

Learning strategies	WCH	Hours	Semester
Reading and independent study	0	45	winter term
Taught session	2	30	winter term
Exercises	2	30	winter term
Preparation of presentation	0	45	winter term

Coursework:
- none

Preparatory work:
- none

Assessment details:

Final examination	1. Repetition	2. Repetition	Weighting
Project task	Project task	Project task	50%
Presentation and discussion	Presentation and discussion	Presentation and discussion	50%

Dates of final examinations:

1. Date: during term
1. Repetition: by arrangement
2. Repetition: within one year of the first repetition date