MODULE HANDBOOK

Master of Arts

International Management (FS-MAINTE-60)

60 ECTS

Distance Learning

iubh UNIVERSITY OF APPLIED SCIENCES

Contents

2021-08-15

1. Term

Managing Across Borders

Module Code: DLMINTMAB_E

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Markus Prandini (Managing Across Borders)

Contributing Courses to Module

- Managing Across Borders (DLMINTMAB01_E)

Module Exam Type

Module Exam	Split Exam
Study Format: Fernstudium Exam, 90 Minutes	

Weight of Module

see curriculum

Module Contents

- International economic and business environment
- Globalization and international competitiveness
- International Trade
- International financial and capital markets
- International organizations and economic integration
- Current hot spots in the international economic and business environment

Learning Outcomes

Managing Across Borders

On successful completion, students will be able to

- identify the main developments and trends in the global economic environment and use them as a basis for business decisions.
- demonstrate the development of globalization and world trade in the last decades.
- explain the causes and effects of protectionism on a country's economic development.
- understand the interrelationships of international financial and capital markets and assess them with regard to the handling of exchange rate risks.
- explain the importance of international organizations such as the World Trade Organization (WTO) or the International Monetary Fund (IMF) for global cooperation.
- form their own opinion on current issues of international economic policy.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the fields of Business Administration & Management	All Master Programs in the Business & Management fields

Managing Across Borders

Course Code: DLMINTMAB01_E

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The interdependence of economies, markets and technologies has increased continuously over the past decades. In addition to the former three dominant economic areas of the USA, Europe and Japan, emerging markets have joined the group, which play an increasingly important role in world trade. Global networking creates both opportunities and risks for internationally active companies. In this course, students acquire a deeper understanding of global economic, political and technological interrelationships as a basis for strategic decisions of internationally operating companies. In addition to knowledge of international trade, international financial and capital markets, and international organizations, students will be able to form their own well-founded opinion on current developments and trends in the international economic and business environment by the end of this course.

Course Outcomes

On successful completion, students will be able to

- identify the main developments and trends in the global economic environment and use them as a basis for business decisions.
- demonstrate the development of globalization and world trade in the last decades.
- explain the causes and effects of protectionism on a country's economic development.
- understand the interrelationships of international financial and capital markets and assess them with regard to the handling of exchange rate risks.
- explain the importance of international organizations such as the World Trade Organization (WTO) or the International Monetary Fund (IMF) for global cooperation.
- form their own opinion on current issues of international economic policy.

Contents

1. International economic and business environment
   - 1.1 Economic environment
   - 1.2 Political environment
   - 1.3 Technological environment

2. Globalization and international competitiveness
   - 2.1 Definition and development of globalization
   - 2.2 Opportunities and threats of globalization
   - 2.3 International competitiveness

3. International Trade
   - 3.1 Theories and models of international trade
   - 3.2 Importance of international trade for an economy
   - 3.3 Protectionism as a threat to international business

4. International financial and capital markets
   - 4.1 Importance of international financial and capital markets for globally active companies
   - 4.2 International exchange rate regimes
   - 4.3 Hedging of exchange rate risks

5. International organizations and economic integration
   - 5.1 International organizations as the basis of the world economy (WTO, World Bank, ADB, IMF)
   - 5.2 Economic integration as driver for international business (EU, NAFTA, ASEAN)
   - 5.3 Regionalization of the world economy

6. Current hot spots in the international economic and business environment
   - 6.1 USA-China: Struggle for political and economic supremacy
   - 6.2 Emerging Markets: new players in the global economy
   - 6.3 Agenda 2030: Sustainable Development Goals (SDG)

Literature

Compulsory Reading

Further Reading

- Asian Development Bank. https://www.adb.org/ [accessed on 17 August 2020].
- Cavusgil, S.T. / Knight, G. / Riesenberger, J.R. (2019): International Business: The New Realities. 5th Global Edition. Pearson, Harlow England.
- Collinson, S. / Rugman, A. M. / Narula, R. (2017): International business [electronic resource]. Pearson, Harlow England.
- Global Edge. https://globaledge.msu.edu/ [accessed on 17 August 2020].
- Hill, C.W. / Hult, C.T. (2016): International Business. Competing in the International Marketplace. 11th Edition. McGraw-Hill Higher Education, New York.
- International Monetary Fund. https://www.imf.org/ [accessed on 17 August 2020].
- World Bank Group. https://www.worldbank.org/ [accessed on 17 August 2020].
- World Trade Organization. https://www.wto.org/ [accessed on 17 August 2020].

Study Format Fernstudium

Study Format	**Course Type**
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

DLMINTMAB01_E

Advanced Research Methods

Module Code: DLMARM

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Markus Prandini (Advanced Research Methods)

Contributing Courses to Module

- Advanced Research Methods (DLMARM01)

Module Exam Type

Module Exam	Split Exam
Study Format: Fernstudium Written Assessment: Written Assignment	

Weight of Module

see curriculum

Module Contents

- Social science and research paradigms
- Case study research
- Specific topics of qualitative research
- Advanced issues of qualitative research conceptualization and data analysis
- Underlying assumptions of quantitative research: concepts and consequences
- Evaluation research

Learning Outcomes

Advanced Research Methods

On successful completion, students will be able to

- understand and apply scientific methodologies in conducting empirical research.
- plan, design, and prepare research proposals.
- differentiate between different types of case studies, select and apply different data collection strategies.
- plan, conduct, and analyze case studies and surveys.
- scientifically analyze quantitative and qualitative data.
- conduct evaluation research to determine quality of research.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Methods	All Master Programmes in the Business & Management fields

Advanced Research Methods

Course Code: DLMARM01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

Advanced research methods, specifically business research, is scientific inquiry that attempts to uncover new information which helps a business improve performance, maximizing shareholder value while adhering to ethical and moral compliance standards.Managers seeking to conduct empirical research must maintain validity, reliability, and trustworthiness when utilizing scientific methodologies in order to produce meaningful and actionable results. Research proposals are typically written prior to conducting research, which have a certain structure, enabling the researcher to properly plan, conduct, and analyze case studies and surveys. Different data collection strategies are used to collect both qualitative and quantitative data, depending on the research proposal goals. Managers utilize their understanding of research methodologies to accurately assess the quality of research.

Course Outcomes

On successful completion, students will be able to

- understand and apply scientific methodologies in conducting empirical research.
- plan, design, and prepare research proposals.
- differentiate between different types of case studies, select and apply different data collection strategies.
- plan, conduct, and analyze case studies and surveys.
- scientifically analyze quantitative and qualitative data.
- conduct evaluation research to determine quality of research.

Contents

1. Theoretical Background: Social Science and Research Paradigms
   - 1.1 What is a Paradigm?
   - 1.2 Empiricism
   - 1.3 Critical Rationalism
   - 1.4 Epistemological Anarchism
   - 1.5 Structural Functionalism
   - 1.6 Symbolic Interactionism
   - 1.7 Ethnomethodology

2. Case Study Research
   - 2.1 Types of Case Study Research
   - 2.2 Maintaining Quality in Case Study Research
   - 2.3 Case Study Design
   - 2.4 Implementing Case Studies
   - 2.5 Analyzing Case Studies

3. Specific Topics of Qualitative Research
   - 3.1 Idea Generation
   - 3.2 Critical Incident Technique
   - 3.3 Understanding Communication: Discourse Analysis
   - 3.4 Perceiving Perception: Interpretive Phenomenological Analysis

4. Advanced Issues of Qualitative Research Conceptualizing and Data Analysis
   - 4.1 Measurement Theory
   - 4.2 Index and Scale Construction
   - 4.3 Types of Scale Construction
   - 4.4 The Problem of Nonresponse and Missing Data
   - 4.5 Implications of IT for Research Strategies

5. Underlying Assumptions of Quantitative Research: Concepts and Consequences
   - 5.1 Classical Test Theory
   - 5.2 Probabilistic Test Theory
   - 5.3 Advanced Topics of Test Theory

6. Evaluation Research
   - 6.1 What is Evaluation Research?
   - 6.2 Types of Evaluation Research
   - 6.3 Meta-Analysis
   - 6.4 Meta-Evaluation

Literature

Compulsory Reading

Further Reading

- Babbie, E. R. (2016). The practice of social research (14th ed.). Boston, MA: Cengage Learning.
- Camargo, F. R., & Henson, B. (2015). Beyond usability: Designing for consumers' product experience using the Rasch model. Journal of Engineering Design, 26 (4–6), 121–139.
- Olson, L. E. (2014). Articulating a role for program evaluation in responsible conduct of research programs. Accountability in Research, 21 (1), 26–33.
- Tumele, S. (2015). Case study research. International Journal of Sales, Retailing and Marketing, 4 (9), 68–78.
- Tursch, P., Steinberg, F., & Woll, R. (2014). A first step towards engineer-oriented adaptation of the Repetory Grid Technique. Total Quality Management & Business Excellence, 25(7-8), 734–749.
- Zickar, M. J. (2012). A review of recent advances in item response theory. Research in Personnel and Human Resources Management, 31 , 145–176.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Written Assessment: Written Assignment

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
110 h		20 h	20 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☐ Exam Template	

Intercultural Management

Module Code: DLMINTIM_E

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Markus Prandini (Intercultural Management)

Contributing Courses to Module

- Intercultural Management (DLMINTIM01_E)

Module Exam Type

Module Exam	Split Exam
Study Format: Fernstudium Exam, 90 Minutes	

Weight of Module

see curriculum

Module Contents

- Fundamentals and classification of intercultural management
- Role and importance of intercultural management for companies
- Diversity management in intercultural management
- Entrepreneurial aspects in decision-making for intercultural management
- Focal points of intercultural management
- Intercultural management in selected countries

Learning Outcomes

Intercultural Management

On successful completion, students will be able to

- recognize and classify intercultural management as an independent discipline in business administration.
- use important cultural theories and cultural dimensions as a basis for business decisions in an international context.
- analyze relevant core competencies of a company for successful intercultural management and apply them in concrete situations.
- identify and manage culture-specific influences on the strategy, marketing and human resources of internationally active companies.
- apply important aspects of intercultural management in leadership, communication and cooperation in international teams.
- demonstrate cultural sensitivity and deeper understanding of international cooperation with selected cultural regions (Germany, USA, China).

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the fields of Business Administration & Management	All Master Programs in the Business & Management fields

Intercultural Management

Course Code: DLMINTIM01_E

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

With the ever growing globalization of the economy, the demands on managers and employees to operate successfully in an international environment have increased. An important core competence of internationally active companies is the skill to competently deal with the idiosyncrasies of other cultures. In business administration, an independent discipline of intercultural management has therefore been developed to examine the behavior and cooperation of people from countries and organizations around the world and to derive recommendations for successful interactions on a corporate and personal level. This course provides students with a conceptual framework for a systematic understanding of the concept of culture, cultural synergies and differences, and the convergence and divergence of cultural norms and values. Students acquire the knowledge and intercultural skills necessary to manage and work across borders and cultures in a changing global business environment.

Course Outcomes

On successful completion, students will be able to

- recognize and classify intercultural management as an independent discipline in business administration.
- use important cultural theories and cultural dimensions as a basis for business decisions in an international context.
- analyze relevant core competencies of a company for successful intercultural management and apply them in concrete situations.
- identify and manage culture-specific influences on the strategy, marketing and human resources of internationally active companies.
- apply important aspects of intercultural management in leadership, communication and cooperation in international teams.
- demonstrate cultural sensitivity and deeper understanding of international cooperation with selected cultural regions (Germany, USA, China).

Contents

1. Fundamentals and classification of intercultural management
   - 1.1 Intercultural management as an independent discipline in business administration
   - 1.2 Important cultural concepts as basis for intercultural management
   - 1.3 Important cultural dimensions as basis for intercultural understanding

2. Role and importance of intercultural management for companies
   - 2.1 International developments and contexts for enterprises
   - 2.2 Connection between national culture and corporate culture
   - 2.3 Entrepreneurial core competencies for successful intercultural management

3. Diversity management in intercultural management
   - 3.1 Working with diversity in companies
   - 3.2 Management styles in individualistic and collectivist cultures
   - 3.3 Reconciliation of cultural dilemmas

4. Entrepreneurial decision-making dimensions of intercultural management
   - 4.1 Strategy
   - 4.2 Marketing
   - 4.3 Human Resources Management (HRM)

5. Focal points of intercultural management
   - 5.1 Intercultural management and Corporate Governance
   - 5.2 Intercultural communication
   - 5.3 Intercultural teamwork

6. Intercultural management in selected countries
   - 6.1 Germany
   - 6.2 USA
   - 6.3 China

Literature

Compulsory Reading

Further Reading

- Browaeys, M-J. / Price, R. (2015): Understanding Cross-Cultural Management. 3rd Edition, Pearson, Upper Saddle River.
- Deresky, H. (2017): International Management: Managing Across Borders and Cultures. 9th Edition, Pearson Education Limited, Harlow.
- Steers, R. M. / Nardon, L. / Sanchez-Runde, C. J. (2016): Management across Cultures. Developing Global Competencies. Cambridge University Press, Cambridge.
- Thomas, D.C. / Inkson, K. (2017): Cultural Intelligence: Surviving and Thriving in the Global Village. 3rd Edition, Berrett-Koehler Publishers, Oakland.
- Trompenaars, F. (2012): Riding the Waves of Culture. Understanding Cultural Diversity in Global Business. 3rd Edition, N. Brealey Publishing, London/Boston.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

DLMINTIM01_E

Strategic Management

Module Code: DLMBSME

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	None	MBA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Maren Weber (Strategic Management)

Contributing Courses to Module

- Strategic Management (DLMBSME01)

Module Exam Type

Module Exam	Split Exam
Study Format: Fernstudium Exam, 90 Minutes	

Weight of Module

see curriculum

Module Contents

- Foundations and concepts of strategic management
- Strategic planning process
- International challenges of strategic management

Learning Outcomes

Strategic Management

On successful completion, students will be able to

- Understand the entire process of strategic planning from the organizational planning, the implementation to the evaluation and controlling.
- Apply appropriate analysis tools in order to methodically address specific business decisions.
- Analyze the capabilities of their organization from a functional and resource perspective by evaluating its strengths and weaknesses.
- Develop a better understanding of the wider business environment by analyzing the opportunities and threats facing their organization.
- Evaluate strategies by employing appropriate controlling tools.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Business Administration & Management.	All Master Programmes in the Business & Management field.

Strategic Management

Course Code: DLMBSME01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MBA	English		5	None

Course Description

Various methods of strategic market analysis are presented in this course so as to allow students to evaluate risks and opportunities in markets and understand strengths and weaknesses of organizations that face specific market situations. Supported by new developments in the field of market research, the process for identifying and analyzing core competencies and competitive advantages in national and international environments is discussed at length. Students are supported to plan strategic alternatives and to implement and control these by taking on fictitious roles within the organization. Exercises and case studies help students to identify with the role of management and participate in the strategic planning process as well as in operational management. This helps students understand the problems companies regularly face and comprehend how methods of modern management can be used in order to solve these.

Course Outcomes

On successful completion, students will be able to

- Understand the entire process of strategic planning from the organizational planning, the implementation to the evaluation and controlling.
- Apply appropriate analysis tools in order to methodically address specific business decisions.
- Analyze the capabilities of their organization from a functional and resource perspective by evaluating its strengths and weaknesses.
- Develop a better understanding of the wider business environment by analyzing the opportunities and threats facing their organization.
- Evaluate strategies by employing appropriate controlling tools.

Contents

1. What is Strategy?
   - 1.1 What is a Corporate Strategy?
   - 1.2 What Has to be Taken into Consideration when Making Strategic Decisions?
   - 1.3 Who Takes Part in Developing a Strategy?
   - 1.4 What is Included in a Solid Strategic Plan?

Literature
Compulsory Reading
Further Reading

- Harvard Business School Essentials. (2006). The essentials of strategy. Boston: Harvard Business School Press.
- Kotler, P., Keller, K. L., Brady, M., Goodman, M., & Hansen, T. (2016). Marketing management (3nd ed.). London: Pearson Education.
- Johnson, G., Scholes, K., & Whittington, R. (2008). Exploring corporate strategy (8th ed.). Harlow: Prentice Hall.
- Mooradian, T. A., Matzler, K., & Ring, L. J. (2014). Strategic marketing. Good Dog Publishing.
- Porter, M. (1998). Competitive advantage: Creating and sustaining superior performance. New York, NY: The Free Press.
- Porter, M. (2004). Competitive strategy: Techniques for analyzing industries and competitors. New York, NY: The Free Press.
- Porter, M. (2008). On competition. Boston, MA: Harvard Business Review Press.
- Wheelen, T. L., & Hunger, D. (2012). Strategic management and business policy: Towards global sustainability (International Edition). Harlow: Pearson.
- Winer, R. S., & Dhar, R. (2013). Marketing management (4th ed.). Harlow: Pearson Education.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Leadership

Module Code: DLMBLSE

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	None	MBA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Georg Berkel (Leadership)

Contributing Courses to Module

- Leadership (DLMBLSE01)

Module Exam Type

Module Exam	Split Exam
Study Format: Fernstudium Exam, 90 Minutes	

Weight of Module

see curriculum

Module Contents

- Foundations of professional leadership
- Leadership and motivation in the corporation
- Leadership and corporate culture
- Leadership and change management

Learning Outcomes

Leadership

On successful completion, students will be able to

- Recognize underlying beliefs and attitudes towards leadership and compare the influence of various theories of leadership on the identification and development of leaders.
- Outline the influence of social roles on leaders and employees, and assess the influence of roles types on the interactions between leaders and those they are leading.
- As a leader, support employees by drawing on empirical evidence to effectively meet the expectations of employees.
- Recognize the roles and conflicting interests inherent to leadership positions and develop strategies to address locomotion and cohesion.
- Discriminate between effective and non-effective methods for managing staff and organizational activities, and apply those techniques and tools in practice to maximize the satisfaction and effectiveness of staff.
- Perform the various responsibilities delegated to a leader such as communicate with employees, lead planning activities, delegate tasks, and plan and lead controlling activities.
- Create a plan to support employees through the process of change within an organization.
- Assess personal leadership style using a variety of measures and evaluate leadership activities relative to transactional and transformational leadership styles.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Business Administration & Management.	All Master Programmes in the Business & Management field.

Leadership

Course Code: DLMBLSE01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MBA	English		5	None

Course Description

In today's knowledge-based society, employees are a firm's most valuable resource. A key responsibility of leadership is to develop the knowledge, expertise, and skills of employees. Good leadership is crucial for the continued success of a firm in the face of increasingly competitive markets. This course presents the necessary competencies of the leader in a modern, knowledge-based organization. Central questions raised by modern leadership theory are presented and discussed. In doing so, the course focuses on requirements and instruments of professional leadership, aspects of situational leadership, and leadership communication and interactions, both in the context of strategic management and change processes. The methodological and conceptual foundations of leadership are presented to students, along with empirical examples and best-practice principles, with the intent for students to master the challenges of enhancing the firm's most valuable asset—its employees—via professional and contemporary leadership practices.

Course Outcomes

On successful completion, students will be able to

- Recognize underlying beliefs and attitudes towards leadership and compare the influence of various theories of leadership on the identification and development of leaders.
- Outline the influence of social roles on leaders and employees, and assess the influence of roles types on the interactions between leaders and those they are leading.
- As a leader, support employees by drawing on empirical evidence to effectively meet the expectations of employees.
- Recognize the roles and conflicting interests inherent to leadership positions and develop strategies to address locomotion and cohesion.
- Discriminate between effective and non-effective methods for managing staff and organizational activities, and apply those techniques and tools in practice to maximize the satisfaction and effectiveness of staff.
- Perform the various responsibilities delegated to a leader such as communicate with employees, lead planning activities, delegate tasks, and plan and lead controlling activities.
- Create a plan to support employees through the process of change within an organization.
- Assess personal leadership style using a variety of measures and evaluate leadership activities relative to transactional and transformational leadership styles.

Contents

4. Leadership from the Manager's Perspective
   - 4.1 Self-Concept as a Manager
   - 4.2 Locomotion and Cohesion
   - 4.3 Individual Problems and Learning Dimensions of Management Behavior
   - 4.4 The Concept of Human Nature and Its Influence on Management Behavior: Theories from Maslow, McGregor, and Herzberg
   - 4.5 Ambiguity Tolerance

5. Management Tools
   - 5.1 Management Tools - Definition
   - 5.2 Organizational Management Tools
   - 5.3 Personnel Management Tools

6. Managerial Functions
   - 6.1 Responsibilities of a Manager
   - 6.2 Communication
   - 6.3 Foundations of Interpersonal Communication
   - 6.4 Planning
   - 6.5 Setting Objectives
   - 6.6 Delegating
   - 6.7 Controlling
   - 6.8 Creating a Feedback Culture

7. Organizational Change
   - 7.1 Knowledge
   - 7.2 Cultural Value Change and Subjectification
   - 7.3 Globalization
   - 7.4 Technological Progress
   - 7.5 Change Management – Leadership in Times of Change

8. Successful Employee Management
   - 8.1 Measuring Leadership Style and Leadership Behavior
   - 8.2 Measuring Transactional and Transformational Leadership with the Multifactor Leadership Questionnaire (MLQ)
   - 8.3 Correlation of Leadership Behavior with Subjective and Objective Success Criteria
   - 8.4 Validation of Leadership Success Using Situational Factors
   - 8.5 Leadership Principles Guiding Leadership Behavior

Literature

Compulsory Reading

- Bloisi, W. C., Cook, C., & Hunsaker, C. W. (2006). Management and organisational behaviour. McGraw-Hill Education.
- Burnes, B. (2009). Managing change (5th ed.). Harlow: Prentice Hall.
- Coleman, P. T., Deutsch, M., & Marcus, E. C. (2014). The handbook of conflict resolution (3rd ed.). San Francisco: Jossey-Bass.
- Conger, J. A., & Riggio, R. E. (2006). The practice of leadership: Developing the next generation of leaders. Hoboken, NJ: John Wiley.
- Hannum, K., Martineau, J. W., & Reinelt, C. (Eds.). (2006). The handbook of leadership development evaluation. San Francisco: Jossey-Bass.
- Harvard Business Essentials. (2007). Managers toolkits: The 13 skills mangers need to succeed. Boston: Harvard Business School Press.
- Kotter, J. (2002). The heart of change. Boston: Harvard Business School Press.
- Peters, T. (2005). Leadership: Tom Peter's essentials. New York, NY: DK Publishing.
- Thompson, L. (2013). Making the team (5th ed.). Harlow: Pearson.
- Ury, B., Brett, J. M., & Goldberg, S. B. (1993). Getting disputes resolved: Designing systems to cut the costs of conflict. San Francisco: Jossey-Bass.

Further Reading

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☐ Exam Template	

DLMBLSE01

Business Ethics and Corporate Governance

Module Code: DLMBAEBECG

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	None	MBA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Jürgen Matthias Seeler (Business Ethics and Corporate Governance)

Contributing Courses to Module

- Business Ethics and Corporate Governance (DLMBAEBECG01)

Module Exam Type

Module Exam	Split Exam
Study Format: Fernstudium Written Assessment: Written Assignment	

Weight of Module

see curriculum

Module Contents

- Introduction to Business Ethics and Corporate Governance
- Ethics Theories
- Business Ethics Problem Areas and Solutions
- Basic Perspectives of Corporate Governance
- Monitoring Concepts for Corporate Governance
- Combining Business Ethics and Corporate Governance

Learning Outcomes

Business Ethics and Corporate Governance

On successful completion, students will be able to

- explain the most important concepts and definitions of business ethics.
- distinguish important theories of business ethics.
- implement business ethics concepts in business practice.
- explain different understandings of corporate governance.
- highlight the influences of business ethics on corporate governance.
- discuss the relationship between business ethics and corporate governance on the basis of a term paper using an example from business practice.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Economics	All Master Programs in the Business & Management fields

Business Ethics and Corporate Governance

Course Code: DLMBAEBECG01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MBA	English		5	None

Course Description

Within the framework of the course "Business Ethics and Corporate Governance", the students prepare a written assignment for which they have to select one out of a variety of topics proposed in the Learning Management System. Students are required to demonstrate their capacity to link business ethics and corporate governance, both theoretically and based on an example from business practice. The students show the ability to familiarize themselves with the topic, to link scientific theory and entrepreneurial practice and to present their findings in a structured systematic way.

Course Outcomes

On successful completion, students will be able to

- explain the most important concepts and definitions of business ethics.
- distinguish important theories of business ethics.
- implement business ethics concepts in business practice.
- explain different understandings of corporate governance.
- highlight the influences of business ethics on corporate governance.
- discuss the relationship between business ethics and corporate governance on the basis of a term paper using an example from business practice.

Contents

1. Introduction to Business Ethics and Corporate Governance
   - 1.1 Basic Terms and Definitions in Business Ethics
   - 1.2 Basic Terms and Definitions in Corporate Governance
   - 1.3 The Link between Business Ethics and Corporate Governance
2. Ethics Theories
   - 2.1 Ethics Theories
   - 2.2 Comparison between Deontology and Utilitarianism
   - 2.3 Business Ethics Concepts evolving from Ethics Theories

3. Business Ethics Problem Areas and Solutions
   - 3.1 Categorization of Ethical Problems in Business
   - 3.2 Components of a Corporate Ethics Program
   - 3.3 Ethics Implementation in Business Practice

4. Basic Perspectives of Corporate Governance
   - 4.1 Important Terms and Definitions of Corporate Governance
   - 4.2 Approaches to Corporate Governance
   - 4.3 The Concept of Control

5. Monitoring Concepts for Corporate Governance
   - 5.1 Governance Mechanisms
   - 5.2 Governance Systems
   - 5.3 Corporate Governance Codes

6. Combining Business Ethics and Corporate Governance
   - 6.1 Linking Business Ethics and Corporate Governance
   - 6.2 Developing an Ethically Oriented Corporate Governance
   - 6.3 Leadership in the Context of Ethical Corporate Governance

Literature

Compulsory Reading

Further Reading

- Rossouw, D./van Vuuren, L. (2018): Business Ethics. 6. Auflage, Oxford University Press, SA.
- Schnebel, E. (2017): Wirtschaftsethik im Management. Rationalität und Verantwortung in organisationalen Handlungen. Springer Gabler Verlag, Wiesbaden.
- Welge, M. K./Eulerich, M. (2012): Corporate-Governance-Management. Theorie und Praxis der guten Unternehmensführung. Springer Fachmedien, Wiesbaden.
- Clarke, T./Branson, D. (Hrsg.) (2012): The Sage Handbook of Corporate Governance. Sage, London.
- Müller-Seitz, G./Braun, T. (2013): Erfolgreich Abschlussarbeiten verfassen im Studium der BWL und VWL. Pearson, Halbergmoos.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Written Assessment: Written Assignment

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
110 h		20 h	20 h		150 h

Instructional Methods	
☐ Learning Sprints®	☑ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☑ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☐ Exam Template	

2. Term

Seminar: Current Issues in International Management

Module Code: DLMINTSATIM_E

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	None	MA	5	150 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Markus Prandini (Seminar: Current Issues in International Management)

Contributing Courses to Module

- Seminar: Current Issues in International Management (DLMINTSATIM01_E)

Module Exam Type

Module Exam	Split Exam
Study Format: Distance Learning Written Assessment: Research Essay	

Weight of Module

see curriculum

Module Contents

In the seminar "Current Issues in International Management", students deal with the opportunities and challenges facing internationally operating companies. The focus is on management and leadership skills that are important and necessary for successful work in an international environment.

Learning Outcomes

Seminar: Current Issues in International Management

On successful completion, students will be able to

- purpose fully apply management and leadership skills for work in an international environment.
- classify significant developments and trends in the international environment and to derive objectives for the international strategic positioning of a company.
- develop internationalization strategies in an appropriate and effective way for companies of different sizes and in different sectors.
- describe internationalization processes in an effective and efficient way on the functional level of a company.
- justify suitable market selection and market entry strategies in foreign markets on the basis of existing capacities and resources of a company.
- to recognize intercultural characteristics and business practices in international business and to harmonize them with their own values and norms.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Business Administration & Management.	All Master Programs in the Business & Management fields.

Seminar: Current Issues in International Management

Course Code: DLMINTSATIM01_E

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The international orientation of economies and enterprises has steadily increased since the 1950s. This has also increased the demands on managers to operate successfully not only in their home market, but also in an ever more globalized economy. The expansion into international markets poses a number of challenges for companies which, in most cases, cannot be mastered with the business practices tried and tested in the home market. The seminar "Current Issues in International Management" promotes the development of students' competencies to understand the cultural, social, economic and political context of other countries in all its diversity and complexity as the basis for successful international business activities and to incorporate this knowledge into business management decisions.

Course Outcomes

On successful completion, students will be able to

- purpose fully apply management and leadership skills for work in an international environment.
- classify significant developments and trends in the international environment and to derive objectives for the international strategic positioning of a company.
- develop internationalization strategies in an appropriate and effective way for companies of different sizes and in different sectors.
- describe internationalization processes in an effective and efficient way on the functional level of a company.
- justify suitable market selection and market entry strategies in foreign markets on the basis of existing capacities and resources of a company.
- to recognize intercultural characteristics and business practices in international business and to harmonize them with their own values and norms.

Contents

- In the seminar "Current Issues in International Management", students deal with the opportunities and challenges facing internationally operating companies. The focus is on management and leadership skills that are important and necessary for successful work in an international environment. Thematically, the seminar focuses on developments and trends in the international business environment, strategies and processes of internationalization, market selection and market entry strategies in foreign markets, operative implementation of an internationalization strategy in individual functional areas as well as cultural and ethical conflict potential of international business activities.

Literature
Compulsory Reading
Further Reading ▪ Cavusgil, S.T., Knight, G. & Riesenberger, J.R. (2019): International Business: The New Realities. 5th (Global) Edition. Pearson, Harlow England. ▪ Collinson, S., Rugman, A. M., & Narula, R. (2017): International business. Pearson, Harlow England. ▪ Deresky, H. (2017): International Management: Managing Across Borders and Cultures. 9th Edition, Pearson Education Limited, Harlow. ▪ Khanna, T. (2014): Contextual Intelligence. Harvard Business Review. https://hbr.org/2014/09/contextual-intelligence [letzter Zugriff: 10.12.2020]. ▪ Thomas, D.C. & Inkson, K. (2017): Cultural Intelligence: Surviving and Thriving in the Global Village. 3rd Edition, Berrett-Koehler Publishers, Oakland.

Study Format Distance Learning

Study Format	Course Type
Distance Learning	Seminar

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Research Essay

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
120 h		30 h			150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☐ Course Book	☐ Creative Lab
☐ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☐ Audio	
☐ Exam Template	

DLMINTSATIM01_E

Sales, Pricing and Brand Management

Module Code: DLMBSPBE

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimaldauer: 1 Semester	WiSe/SoSe	English

Module Coordinator

Caterina Fox (Global Brand Management) / Caterina Fox (Sales and Pricing)

Contributing Courses to Module

- Global Brand Management (DLMBSPBE01)
- Sales and Pricing (DLMBSPBE02)

Module Exam Type

Module Exam	Split Exam
	Global Brand Management • Study Format "Fernstudium": Exam, 90 Minutes Sales and Pricing • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

Global Brand Management

- For most companies, a major opportunity to grow their business involves looking for possibilities outside their native country. However, taking brands beyond national boundaries presents a new set of branding issues as the global marketplace is constantly changing. At the same time, various forms of regionalization are taking place, adding another layer of complexity to managing a brand portfolio. Arguably, products, pricing and distribution are increasingly becoming commodities and the new competitive arena is brand value, creating long-term, profitable brand relationships. Ultimately, strong brands will transcend industries and provide an organization with one of its most valuable assets. This course ultimately aims to introduce students to the differentiation of products and services in a world of alternatives and the benefits/disadvantages of providing customers with the power of choice.

Establishing and maintaining a competitive customer interface is one of the major challenges for every company to assure successful revenue- and profit-management. The course will allow students to understanding the optimization levers of the customer interface. This includes advanced methods of market- and customer segmentation, channel management including the design, setup and optimization of a customer oriented sales organization (e.g. key account management), practices for sales-force-effectiveness, sales optimization levers, e.g. for customer penetration, and methods for price-differentiation and -realization. The course incorporates case-studies and practice related data and for each optimization lever, students are introduced to a comprehensive tool-box approach. The tool box for each lever contains the required theory, a set of basic analyses and the application of best-practice examples and metrics.

Sales and Pricing

Learning Outcomes

Global Brand Management

On successful completion, students will be able to

- analyze brands, brand components and brand management.
- examine how brands are positioned and re-positioned in regional, national and international markets and explore the concept of shared- and co-operative branding.
- promote the importance of brand valuation and measurement techniques within their company.
- form and apply tactics to address brand falsification and protection as well as to develop strategies to manage a brand crisis.
- analyze the main challenges facing international brands, and be able to measure their brand equity
- understand the factors that contribute to increasing or losing consumer-based brand equity.
- analyze a company's current brand strategy and propose viable alternatives as well as make informed decisions with greater probability of success.

Sales and Pricing

On successful completion, students will be able to

- identify the key-success factors for modern sales organizations.
- describe the relationship between segmentation and the design of an appropriate sales organization.
- execute respective analyses and apply improvement levers.
- demonstrate the use of the tool-boxes for the respective optimization levers.
- identify major characteristics of a high-performance sales organization.
- conduct decisive analyses to assess the strength and weaknesses of a sales organization and identify respective optimization levers.
- implement the required organizational and process-related improvement levers.
- measure the performance of a sales-organization using established methods, KPIs and metrics.
- apply fundamental concepts of international pricing.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field(s) of Marketing & Sales	All Master Programmes in the Marketing field(s)

Global Brand Management

Course Code: DLMBSPBE01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

For most companies, a major opportunity to grow their business involves looking for possibilities outside their native country. However, taking brands beyond national boundaries presents a new set of branding issues as the global marketplace is constantly changing. At the same time, various forms of regionalization are taking place, adding another layer of complexity to managing a brand portfolio. Arguably, products, pricing and distribution are increasingly becoming commodities and the new competitive arena is brand value, creating long-term, profitable brand relationships. Ultimately, strong brands will transcend industries and provide an organization with one of its most valuable assets. This course ultimately aims to introduce students to the differentiation of products and services in a world of alternatives and the benefits/disadvantages of providing customers with the power of choice.

Course Outcomes

On successful completion, students will be able to

- analyze brands, brand components and brand management.
- examine how brands are positioned and re-positioned in regional, national and international markets and explore the concept of shared- and co-operative branding.
- promote the importance of brand valuation and measurement techniques within their company.
- form and apply tactics to address brand falsification and protection as well as to develop strategies to manage a brand crisis.
- analyze the main challenges facing international brands, and be able to measure their brand equity
- understand the factors that contribute to increasing or losing consumer-based brand equity.
- analyze a company's current brand strategy and propose viable alternatives as well as make informed decisions with greater probability of success.

Contents

1. Introduction to Global Brand Management
   - 1.1 Brand, Brand Equity, and Brand Value
   - 1.2 Brand Management and Brand Leadership
   - 1.3 Integrating Marketing Activities

2. Culture and Branding
   - 2.1 What is Culture?
   - 2.2 Culture and Consumer Behavior
   - 2.3 The Global-Local Dilemma of Branding

3. Creating Global Brands
   - 3.1 Brand Positioning
   - 3.2 Designing and Implementing Stages of Branding Strategies
   - 3.3 Choosing Brand Elements to Build Brand Equity
   - 3.4 Designing Marketing Programs to Build Brand Equity

4. Managing Global Brands
   - 4.1 Branding Strategy
   - 4.2 Brand Hierarchy
   - 4.3 Business-to-Business (B2B) Brand Management Strategies

5. Growing and Sustaining Brand Equity
   - 5.1 Extending the Brand
   - 5.2 Brand Alliances
   - 5.3 Green and Cause Marketing

6. Measuring Global Brand Equity and Performance
   - 6.1 Brand Equity Measurement Systems
   - 6.2 Measuring Sources of Brand Equity
   - 6.3 Measuring Outcomes of Brand Equity

7. Brand Analysis and Strategy Across Multiple Markets: A Managerial Approach
   - 7.1 Internal Analysis
   - 7.2 External Analysis
   - 7.3 Global Brand Management Scenarios

8. Managing a Brand Crisis
   - 8.1 Revitalizing a Brand
   - 8.2 Brand Falsification
   - 8.3 Brand Protection Strategies
   - 8.4 Brand Crises

Literature

Compulsory Reading

Further Reading

- Aaker, D. A., & Joachimsthaler, E. (2000). Brand leadership: The next level of the brand revolution . New York: Free Press.
- Barron, J., & Hollingshead, J. (2004). Brand globally, market locally. Journal of Business Strategy, 25 (1), 9–14.
- Chernatony, L. D. (2002). Would a brand smell any sweeter by a corporate name? Corporate Reputation Review, 5 (2-3), 114–132.
- De Chernatony, L., & McDonald, M. (2003). Creating powerful brands in consumer, service, and industrial markets (3rd ed.). Oxford: Butterworth-Heinemann.
- De Chernatony, L., & Riley, F. D. (1998). Defining a "brand": Beyond the literature with experts' interpretations. Journal of Marketing Management, 14 (5), 417–443.
- Gad, T. (2001). 4-D branding: Cracking the corporate code of the network economy . London, U.K.: Financial Times Prentice Hall.
- Gao, P., Woetzel, J., & Wu, Y. (2003). Can Chinese brands make it abroad? McKinsey Quarterly, 40 (1), 3–13.
- Gregory, J. R., & Wiechmann, J. G. (2001). Branding across borders: A guide to global brand marketing . Chicago, IL: McGraw-Hill.
- Joachimsthaler, E., Aaker, D., Quelch, J., & Vishwanath, V. (1999). Harvard business review on brand management . Boston, MA: Harvard Business School Press.
- Keller, K. L. (2012). Strategic brand management: Best practice cases in branding (3rd ed.). Upper Saddle River, NJ: Prentice Hall.
- Keller, K. L. (2012). Strategic brand management: Building, measuring and managing brand equity (4th ed.). Upper Saddle River, NJ: Prentice Hall.
- Lindström, M. (2005). Brand sense: Build powerful brands through touch, taste, smell, sight, and sound . New York City, NY: Free Press.
- Mudambi, S. (2002). Branding importance in business-to-business markets. Industrial Marketing Management, 31 (6), 525–533.
- Roll, M. (2016).

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Sales and Pricing

Course Code: DLMBSPBE02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMBSPBE01

Course Description

Establishing and maintaining a competitive customer interface is one of the major challenges for every company to assure successful revenue- and profit-management.The course will allow students to understanding the optimization levers of the customer interface. This includes advanced methods of market- and customer segmentation, channel management including the design, setup and optimization of a customer oriented sales organization (e.g. key account management), practices for sales-force-effectiveness, sales optimization levers, e.g. for customer penetration, and methods for price-differentiation and -realization.The course incorporates case-studies and practice related data and for each optimization lever, students are introduced to a comprehensive tool-box approach. The tool box for each lever contains the required theory, a set of basic analyses and the application of best-practice examples and metrics.

Course Outcomes

On successful completion, students will be able to

- identify the key-success factors for modern sales organizations.
- describe the relationship between segmentation and the design of an appropriate sales organization.
- execute respective analyses and apply improvement levers.
- demonstrate the use of the tool-boxes for the respective optimization levers.
- identify major characteristics of a high-performance sales organization.
- conduct decisive analyses to assess the strength and weaknesses of a sales organization and identify respective optimization levers.
- implement the required organizational and process-related improvement levers.
- measure the performance of a sales-organization using established methods, KPIs and metrics.
- apply fundamental concepts of international pricing.

Contents

1. Segmentation
   - 1.1 Customer Segmentation
   - 1.2 Selection of Market Segments for Market Entry
   - 1.3 Development of Market Segments

2. Channel Management
   - 2.1 Distribution System as a Function of the Products Sold
   - 2.2 Selection of Distribution Partners
   - 2.3 Professionalization and Mobilization of Distribution Partners
   - 2.4 Control of Distribution Partners

3. Sales Force Effectiveness
   - 3.1 Sales Strategy
   - 3.2 Sales Process
   - 3.3 Sales Organization
   - 3.4 Sales Information and Management Systems
   - 3.5 Sales Controlling

4. Sales Optimization Levers
   - 4.1 Key Account Management
   - 4.2 Proactive Sales
   - 4.3 Value-Based Selling
   - 4.4 Online Sales Tools

5. Fundamentals of International Pricing
   - 5.1 Pricing Strategies
   - 5.2 Pricing for Market Segments
   - 5.3 Transaction Pricing and Managing the Price Waterfall
   - 5.4 Price Differentiation and Standardization in an International Context

6. Special Topics in International Pricing
   - 6.1 Gray Markets
   - 6.2 Transfer Pricing
   - 6.3 Price Wars
   - 6.4 Innovative Pricing Methods
   - 6.5 Risks in International Business

Literature

Compulsory Reading

Further Reading

- Cichelli, D. J. (2011).
  The sales growth imperative: How world class sales organizations successfully manage the four stages of growth
  . New York City, NY: McGraw-Hill.
- Donovan, M.W. (2011).
  Driven: A manager's field guide to sales team optimization.
  Salisbury, NH: The Dagoba Group.
- Dolan, R. J., Soman, D., Gourville, J. T., Soman, D., Marn, M., Rosiello, R., . . . Ross, E. (2008).
  Harvard business review on pricing
  . Boston, MA: Harvard Business School Pub.
- Lever, B. (2011).
  Marketing optimization applying advanced analytics to customer strategies
  . Hoboken, NJ: John Wiley & Sons.
- Piercy, N., & Lane, N. (2009).
  Strategic customer management: Strategizing the sales organization
  . Oxford, U.K.: Oxford University Press.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Corporate Finance and Investment

Module Code: DLMBCFIE

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prf. Dr. Jessica Hastenteufel (Advanced Corporate Finance) / Prof. Dr. Jessica Hastenteufel (Investment Analysis & Portfolio Management)

Contributing Courses to Module

- Advanced Corporate Finance (DLMBCFIE01)
- Investment Analysis & Portfolio Management (DLMBCFIE02)

Module Exam Type

Module Exam	Split Exam
	Advanced Corporate Finance • Study Format "Fernstudium": Module Exam Investment Analysis & Portfolio Management • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

Advanced Corporate Finance

- Financing decisions and issuing securities
- Debt financing and leasing
- Options and futures
- Takeovers, corporate control, and governance
- Unsolved issues and the future of finance

Investment Analysis & Portfolio Management

- Introduction to investment analysis and portfolio management
- Portfolio selection and the optimum portfolio
- The equilibrium in capital markets and asset pricing models
- Analysis and management of securities
- Evaluation of the investment performance

Learning Outcomes

Advanced Corporate Finance

On successful completion, students will be able to

- identify methods of issuing corporate debt and equity securities, and understand the role of financial intermediaries.
- discuss dividend policy and corporate capital structure in perfect markets vis-à-vis imperfect markets.
- utilize a range of tools for valuing different kinds of debt.
- describe various financing options and their different forms of application in the context of corporate finance.
- discuss mergers and takeovers and the role of different parties involved in the transaction process.

Investment Analysis & Portfolio Management

On successful completion, students will be able to

- describe the theoretical constructs of investments and portfolio analysis.
- apply the modern portfolio theory and the theory of capital markets to practical questions of investment decisions.
- discuss the conflicting priorities between the normative theoretical approach of portfolio selection and equilibrium asset pricing on the one hand, and the practical application of investment decisions such as stock picking and technical analysis on the other hand.
- utilize various tools for researching and analyzing investment vehicles used in the context of asset pricing and asset allocation decisions.
- identify main features and practices of the global investment advisory industry.
- describe warrants and convertibles, options and futures and discuss the application of these vehicles in a portfolio investment context.

Links to other Modules within the Study Program	Links to other Study Programs of IUBH
This module is similar to other modules in the field of Finance & Tax Accounting	All Master Programmes in the Business & Management field

Advanced Corporate Finance

Course Code: DLMBCFIE01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The last decade has seen fundamental changes in financial markets and financial instruments. Both the theory and practice of corporate finance have been moving ahead with uncommon speed. Participants will be guided through the main areas of modern financial theory, including the pricing of assets and derivatives, corporate financial policy, and corporate control. The course emphasizes the modern fundamentals of the theory of finance and brings the theory to life with contemporary examples.

Course Outcomes

On successful completion, students will be able to

- identify methods of issuing corporate debt and equity securities, and understand the role of financial intermediaries.
- discuss dividend policy and corporate capital structure in perfect markets vis-à-vis imperfect markets.
- utilize a range of tools for valuing different kinds of debt.
- describe various financing options and their different forms of application in the context of corporate finance.
- discuss mergers and takeovers and the role of different parties involved in the transaction process.

Contents

1. Financing Decisions and Issuing Securities
   - 1.1 Types of Corporate Financing
   - 1.2 Corporations and Issuing Shares
   - 1.3 Corporations and Issuing Debt Securities
2. Dividend Policy and Capital Structure
   - 2.1 What's Your Dividend Policy?
   - 2.2 What's Your Debt Policy?
   - 2.3 Weighted Average Cost of Capital (WACC)
   - 2.4 Corporate and Personal Taxes
   - 2.5 Capital Structure and Related Theories

3. Debt Financing and Leasing
   - 3.1 Debt Valuation
   - 3.2 Rating Debt
   - 3.3 Different Kinds of Debt and Hybrid Securities
   - 3.4 Leasing as a Form of Corporate Finance

4. Options and Futures
   - 4.1 Derivative Financial Instruments, Options and Futures
   - 4.2 Valuing Options, the Binomial Model, the Black-Scholes Formula
   - 4.3 Real Options

5. Takeovers, Corporate Control, and Governance
   - 5.1 Mergers and Acquisitions
   - 5.2 LBOs, Management Buyouts, and Going Private
   - 5.3 Private Equity and the Venture Capitalist
   - 5.4 Empirical Testing of Takeover Success
   - 5.5 Corporate Governance and Corporate Control

6. Unsolved Issues and the Future of Finance
   - 6.1 What Do We Know and What Do We Not Know About Finance?
   - 6.2 The Future of Finance

Literature

Compulsory Reading

Further Reading

- Copeland, T. E., Weston, J. F., & Shastri, K. (2013). Financial theory and corporate policy (4th ed.). Reading, MA: Addison-Wesley.
- Damodaran, A. (2001). Corporate finance: Theory and practice (4th ed.). New York City, NY: Wiley Ross.
- Hillier, D. (2013). Corporate finance (2nd ed., European edition). Maidenhead, Berkshire: McGraw-Hill.
- Hull, J. (2011). Options, futures, and other derivatives (8th ed.). Upper Saddle River, NJ: Prentice Hall.
- Lintner, J. (1969). The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. The Review of Economics and Statistics, 47 (1), 13–37.
- Smart, S. B., Megginson, W. L., & Gitman, L. J. (2008). Corporate finance (2nd ed.). Boston, MA: Cengage Learning.
- Weston, F. J., Mitchell, M. L., & Mulherin, H. J. (2004). Takeovers, restructuring and corporate governance . Upper Saddle River, NJ: Prentice Hall.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Module Exam

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods

- ☐ Learning Sprints®
- ☑ Course Book
- ☑ Vodcast
- ☐ Shortcast
- ☑ Audio
- ☑ Exam Template
- ☐ Review Book
- ☐ Creative Lab
- ☐ Guideline
- ☐ Live Tutorium/Course Feed

Investment Analysis & Portfolio Management

Course Code: DLMBCFIE02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

Security analysis, asset allocation strategies, and the optimal composition of portfolios of financial assets are some of the most important fields of advanced financial management. This course is designed to bring together investment analysis and portfolio theory and their implementation with regard to portfolio management. Topics to be covered are the theory of portfolio selection and the theory's application, the hypotheses of efficient capital markets and the capital market equilibrium, analysis of investments and the evaluation of portfolios (or mutual funds) of common stocks, bonds, international assets, and other asset classes. Students will be directed through a broad and critical evaluation of the various investment strategies for maximizing returns and minimizing risk on portfolios. Investment analysis and portfolio management is a truly global topic. As a consequence, the course will take an international perspective, provide an insight into the global investment advisory industry, and discuss best-practice approaches around the globe.

Course Outcomes

On successful completion, students will be able to

- describe the theoretical constructs of investments and portfolio analysis.
- apply the modern portfolio theory and the theory of capital markets to practical questions of investment decisions.
- discuss the conflicting priorities between the normative theoretical approach of portfolio selection and equilibrium asset pricing on the one hand, and the practical application of investment decisions such as stock picking and technical analysis on the other hand.
- utilize various tools for researching and analyzing investment vehicles used in the context of asset pricing and asset allocation decisions.
- identify main features and practices of the global investment advisory industry.
- describe warrants and convertibles, options and futures and discuss the application of these vehicles in a portfolio investment context.

Contents

1. Introduction to Investment Analysis and Portfolio Management
   - 1.1 The Asset Management and Investment Advisory Industry
   - 1.2 Financial Instruments, Derivatives, and Organization of Securities Markets
   - 1.3 The History of Investment Analysis

2. Portfolio Selection and the Optimum Portfolio
   - 2.1 Mean Variance Portfolio Theory
   - 2.2 The Calculation of Risk and Return
   - 2.3 Efficient Portfolios and Techniques for Calculating the Efficient Frontier
   - 2.4 Single-Index Models and Multi-Index Models
   - 2.5 International Diversification

3. Equilibrium in Capital Markets and Asset Pricing Models
   - 3.1 Equilibrium in Capital Markets and the Standard Capital Asset Pricing Model
   - 3.2 Empirical Tests of Equilibrium Models
   - 3.3 Extensions to the Single-Factor Capital Asset Pricing Model
   - 3.4 Multifactor Asset Pricing Models: Arbitrage Pricing Theory and the Fama-French Model

4. Analysis of Securities
   - 4.1 Macro- and Microanalyses of Industries and Companies
   - 4.2 Stock Valuation, Intrinsic Value and Market Value Determinants, and Valuation Techniques
   - 4.3 The Analysis and Valuation of Bonds
   - 4.4 Technical Analysis and Behavioral Finance

5. Management of Securities
   - 5.1 The Efficient Market Hypothesis
   - 5.2 Stock and Bond Portfolio Management Strategies Using Active vs Passive Strategies
   - 5.3 Asset Allocation Strategies

6. Investment Vehicles
   - 6.1 Mutual Funds: Types, Industry, and Participants
   - 6.2 Hedge Funds
   - 6.3 Private Equity Funds

7. Evaluation of Investment Performance
   - 7.1 Globalization and International Investing
   - 7.2 Investment Process
   - 7.3 Evaluation of Portfolio Performance Using the Sharpe Ratio, Jensen Measure, Treynor Measure, and Other Measures
   - 7.4 Evaluation of Security Analysis

Literature

Compulsory Reading

Further Reading

- Elton, E.J./Gruber, M.J./Brown, S.J. (2014): Modern portfolio theory and investment analysis. 9th edition, New York City, NY: John Wiley & Sons.
- Reilly, F.K./Brown, K.C. (2008): Investment analysis and portfolio management. 10th edition, Boston, MA: Cengage Learning.
- Alexander, G.J./Sharpe, W.F./Bailey, J.V. (2001): Fundamentals of investments. 3rd edition, Englewood Cliffs, NJ: Prentice Hall.
- Levy, H./Post, T. (2004): Investments. Boston, MA: Addison-Wesley.
- Fabozzi, F.J./Modigliani, F. (2009): Capital markets: Institutions and instruments. 4th edition, Upper Saddle River, NJ: Prentice Hall.
- Markowitz, H.M. (1952): Portfolio selection. Journal of Finance, 7(1), 77–91.
- Fama, E.F. (1970): Efficient capital markets: A review of theory and empirical work. The Journal of Finance, 25(2), 383–417.
- Fama, E.F./French, K.R. (1992): The cross-section of expected stock returns. Journal of Finance, 47(2), 427–465.
- Sharpe, W.F. (1964): Capital asset prices: A theory of market equilibrium under conditions of risk. The Journal of Finance, 19(3), 425–442.
- Lintner, J. (1969): The valuation of risk assets and the selection of risky investments in stock portfolios and capital budgets. The Review of Economics and Statistics,47(1), 13–37.
- Mossin, J. (1966): Equilibrium in a capital asset market. Econometrica, 34(4), 768–783.
- Ross, S.A. (1976): The arbitrage theory of capital asset pricing. Journal of Economic Theory, 13(3), 341–360.

Study Format Fernstudium

Study Format	**Course Type**
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

IT Project and Architecture Management

Module Code: DLMBITPAM

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Inga Schlömer (IT Project Management) / Prof. Dr. Inga Schlömer (IT Architecture Management)

Contributing Courses to Module

- IT Project Management (DLMBITPAM01)
- IT Architecture Management (DLMBITPAM02)

Module Exam Type

Module Exam	Split Exam
	IT Project Management • Study Format "Fernstudium": Exam IT Architecture Management • Study Format "Fernstudium": Written Assessment: Case Study

Weight of Module

see curriculum

Module Contents

IT Project Management

- Organizing the work
- Cost estimation and controlling
- The human factor
- Organizing small and medium projects
- Organizing large projects

IT Architecture Management

- Architecture documentation
- Architecture governance
- Enterprise architecture management (EAM)
- IT application portfolio management
- Enterprise architecture patterns
- Architecture framework: TOGAF

Learning Outcomes

IT Project Management

On successful completion, students will be able to

- critically reflect the status of knowledge on IT project management.
- set up different IT project management formats (small, medium and large projects) and know the methods for managing these different IT projects professionally.
- develop an IT management proposal as the fundament of a professional IT project management concept.
- understand and integrate different IT management project plans (e.g., time plan, cost plan, resources plan, risk plan) and use those plans in an integrative IT project planning and controlling scheme.
- organize and to lead an IT project team and its core and/or extended team members.

IT Architecture Management

On successful completion, students will be able to

- understand that having a well-defined IT architecture blueprint in place is key to success for IT organizations.
- analyze the constraints of existing application, infrastructure and information/ data architectures.
- know different types of IT application portfolio management.
- manage enterprise architecture patterns proactively.
- understand how to initiate change requests in order to modify or extend the IT architecture if the introduction or modification of a service is not possible within a given framework.

Links to other Modules within the Study Program	Links to other Study Programs of IUBH
This module is similar to other modules in the field(s) of Computer Science & Software Development	All Master Programmes in the IT & Technology field(s)

IT Project Management

Course Code: DLMBITPAM01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The purpose of this course is to introduce students to the concepts involved in IT project management. This is achieved through the development of an understanding of the fundamental tenets of project management enhancing the students' ability to apply their knowledge, skills and competencies in analyzing and solving IT project management problems. A special focus is put on the specifics of IT project organization, cost management and the human factor within IT projects.

Course Outcomes

On successful completion, students will be able to

- critically reflect the status of knowledge on IT project management.
- set up different IT project management formats (small, medium and large projects) and know the methods for managing these different IT projects professionally.
- develop an IT management proposal as the fundament of a professional IT project management concept.
- understand and integrate different IT management project plans (e.g., time plan, cost plan, resources plan, risk plan) and use those plans in an integrative IT project planning and controlling scheme.
- organize and to lead an IT project team and its core and/or extended team members.

Contents

1. Introduction: Characteristics of IT Projects
   - 1.1 Defining IT Projects
   - 1.2 Overview on Typical Roles and Phases of IT Projects
   - 1.3 Risks and Challenges of IT Projects
   - 1.4 Role of an IT Project Manager
2. Organizing the Work
   - 2.1 Project Breakdown Structure, Work Packages
   - 2.2 Prioritization
   - 2.3 Time Planning, Milestones, Gantt-Diagram
   - 2.4 Definition of Done

3. Cost Estimation and Controlling
   - 3.1 Challenges of Cost Estimation in IT Projects
   - 3.2 Estimation Techniques: 3-Point Estimation, Double Blind Expert Estimation, Function Points
   - 3.3 Cost Controlling Using Earned Value Analysis
   - 3.4 Risk Management

4. The Human Factor
   - 4.1 Vision Keeping
   - 4.2 Stakeholder Management
   - 4.3 Conflict Management

5. Organizing Small and Medium Projects
   - 5.1 Rational Unified Process (RUP)
   - 5.2 Agile Software Processes
   - 5.3 Scrum
   - 5.4 Plan-driven Project Management in Small Projects

6. Organizing Large Projects
   - 6.1 PMBOK Guide
   - 6.2 Prince2
   - 6.3 Multi Project Management
   - 6.4 Agile Software Processes in Large Projects
   - 6.5 Selection of the Appropriate Project Management Method

Literature

Compulsory Reading

Further Reading

- Hinde, D. (2012). PRINCE2 Study Guide. West Sussex: John Wiley & Sons.
- Kneuper, R. (2018). Software processes and lifecycle models. Cham: Springer Nature Switzerland.
- Phillips, J. (2010). IT project management: On track from start to finish (3rd ed.). New York, NY: McGraw-Hill.
- Project Management Institute. (2013). A guide to the project management body of knowledge: PMBOK guide.
- Schwaber, K. (2004). Agile project management with Scrum. Redmond, WA: Microsoft Press.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

IT Architecture Management

Course Code: DLMBITPAM02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The course IT Architecture Management aims to enable students to define a blueprint for the future development of a particular IT landscape, taking into account service strategies and available technologies given to an IT service provider.

Course Outcomes

On successful completion, students will be able to

- understand that having a well-defined IT architecture blueprint in place is key to success for IT organizations.
- analyze the constraints of existing application, infrastructure and information/ data architectures.
- know different types of IT application portfolio management.
- manage enterprise architecture patterns proactively.
- understand how to initiate change requests in order to modify or extend the IT architecture if the introduction or modification of a service is not possible within a given framework.

Contents

1. Introduction to IT Architectures
   - 1.1 The Term “Architecture” in the Context of IT
   - 1.2 Use Cases and Levels of IT Architectures
   - 1.3 Overview on IT Architecture Management
2. Enterprise Architecture Management (EAM)
   - 2.1 IT-Strategy
   - 2.2 Enterprise Architecture
   - 2.3 Roles and Activities in EAM
3. IT Application Portfolio Management
   - 3.1 Application Handbook
   - 3.2 Portfolio Analyses
   - 3.3 Planning the Application Landscape

4. Architecture Framework: TOGAF
   - 4.1 Purpose and Overview on TOGAF
   - 4.2 Architecture Development Method (ADM)
   - 4.3 Guidelines & Techniques
   - 4.4 Architecture Content Framework
   - 4.5 Architecture Capability Framework

5. Architecture Documentation
   - 5.1 Structures, Components, and Interfaces
   - 5.2 Processes and Applications
   - 5.3 Domain Architecture

6. Architecture Governance
   - 6.1 Roles and Committees
   - 6.2 Processes and Decisions
   - 6.3 Management of Architectural Policies

7. Enterprise Architecture Patterns
   - 7.1 Structures, Components, and Interfaces
   - 7.2 Processes and Applications
   - 7.3 Domain Architecture

Literature

Compulsory Reading

Further Reading

- Hanschke, I. (2009): Strategic IT management: A toolkit for enterprise architecture management. Springer, Berlin, Heidelberg.
- Ross, J. W. / Weill, P. / Robertson, D. C. (2006): Enterprise architecture as strategy: Creating a foundation for business execution. Harvard Business School Publishing, Boston, MA.
- Thabit, I. (2011): Architecture management body of knowledge: AMBOK guide for information technology. IT Architecture Management Institute.
- The Open Group Architecture Framework. (2018): TOGAF 9.2. Retrieved from www.theopengroup.org.

Study Format Fernstudium

Study Format	**Course Type**
Fernstudium	Case Study

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Written Assessment: Case Study

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
110 h		20 h	20 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☐ Exam Template	

Manufacturing Methods Industry 4.0 and Internet of Things

Module Code: DLMBMMIIT

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Leonardo Riccardi (Internet of Things) / Prof. Dr. Leonardo Riccardi (Manufacturing Methods Industry 4.0)

Contributing Courses to Module

- Internet of Things (DLMBMMIIT01)
- Manufacturing Methods Industry 4.0 (DLMBMMIIT02)

Module Exam Type

Module Exam	Split Exam
	Internet of Things • Study Format "Fernstudium": Exam, 90 Minutes Manufacturing Methods Industry 4.0 • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

Internet of Things

- Consumer use cases and risks
- Business use cases and risks
- Social-economic issues
- Enabling technologies and networking fundamentals

Manufacturing Methods Industry 4.0

- Forming
- Cutting
- Rapid prototyping
- Rapid tooling
- Direct manufacturing

Learning Outcomes

Internet of Things

On successful completion, students will be able to

- distinguish and discuss a broad range of use cases for the internet of things (IoT).
- understand and reflect upon the different perspectives on IoT.
- apply distinct techniques to engineer internet-of-things products.
- evaluate and identify appropriate IoT communication technology and standards according to given IoT product requirements.
- reflect on the respective theoretical foundation, evaluate different approaches, and apply appropriate approaches to practical questions and cases.

Manufacturing Methods Industry 4.0

On successful completion, students will be able to

- evaluate different manufacturing methods against given product and process requirements.
- define and design modern additive techniques in contrast to traditional manufacturing.
- assess and estimate the impact of current trends on manufacturing like cyber-physical systems to given manufacturing challenges and practical problems.
- apply modern processes like rapid prototyping, rapid tooling, and direct manufacturing.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field(s) of Computer Science & Software Development	All Master Programmes in the IT & Technology field(s)

Internet of Things

Course Code: DLMBMMIIT01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The internet of things (IoT), once a rough vision, has become reality today in a broad manner. There is a plethora of devices and services available to both consumers and businesses. From smart homes to smart cities, from smart devices to smart factories – internet-of-things technologies impact on our lives and environments. This course follows a top-down approach, discussing a broad set of aspects connected with the internet of things. It starts with use cases and risks from the perspectives of customers and businesses and winds up with a technical foundation of the internet of things. To address the engineering perspective, a set of techniques is proposed.

Course Outcomes

On successful completion, students will be able to

- distinguish and discuss a broad range of use cases for the internet of things (IoT).
- understand and reflect upon the different perspectives on IoT.
- apply distinct techniques to engineer internet-of-things products.
- evaluate and identify appropriate IoT communication technology and standards according to given IoT product requirements.
- reflect on the respective theoretical foundation, evaluate different approaches, and apply appropriate approaches to practical questions and cases.

Contents

1. Introduction into the Internet of Things
   - 1.1 Foundations and Motivations
   - 1.2 Potential and Challenges
2. Social and Business Relevance
   - 2.1 Innovations for Consumers and Industry
   - 2.2 Impact on Human and Work Environment
   - 2.3 Privacy and Security

3. Architectures of Internet of Things and Industrial Internet of Things
   - 3.1 Elements of IoTs and IIoTs
   - 3.2 Sensors and Nodes
   - 3.3 Power Systems
   - 3.4 Fog Processors
   - 3.5 Platforms

4. Communication Standards and Technologies
   - 4.1 Network Topologies
   - 4.2 Network Protocols
   - 4.3 Communication Technologies

5. Data Storage and Processing
   - 5.1 NoSQL and MapReduce
   - 5.2 Linked Data and RDF(S)
   - 5.3 Semantic Reasoning
   - 5.4 Complex Event Processing
   - 5.5 Machine Learning
   - 5.6 Overview of Existing Data Storage and Processing Platforms

6. Fields of Application
   - 6.1 Smart Home/Living
   - 6.2 Smart Buildings
   - 6.3 Ambient Assisted Living
   - 6.4 Smart Energy/Grid
   - 6.5 Smart Factory
   - 6.6 Smart Logistics
   - 6.7 Smart Healthcare
   - 6.8 Smart Agriculture

Literature
Compulsory Reading
Further Reading ▪ Chaouchi, H. (2013). The internet of things: Connecting objects . London: Wiley. ▪ Greengard, S. (2015). The internet of things . Cambridge, MA: MIT Press. ▪ Kellmereit, D., & Obodovski, D. (2013). The silent intelligence: The internet of things . San Francisco, CA: DND Ventures. ▪ Slama, D., Puhlmann, F., Morrish, J., & Bhatnagar, R. M. (2016). Enterprise IoT: Strategies and best practices for connected products and services . Beijing, Boston, Farnham, Sebastopol, Tokyo: O'Reilly. ▪ Weber, R. H., & Weber, R. (2010). Internet of things: Legal perspectives . Berlin, Heidelberg: Springer-Verlag Berlin Heidelberg.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Manufacturing Methods Industry 4.0

Course Code: DLMBMMIIT02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The aim of the course is to enable students to evaluate and identify appropriate manufacturing methods in the context of Industry 4.0. For that purpose, the course provides a comprehensive introduction of such processes based on traditional, standardized manufacturing techniques that have influenced and are still influencing production processes through technological developments under the generic term Industry 4.0. These include technological advances in additive manufacturing processes that enable applications such as rapid prototyping, rapid tooling, and direct manufacturing. Finally, the course deals with the consequences of the digitization and networking of production facilities and their elements in terms of a cyber-physical system.

Course Outcomes

On successful completion, students will be able to

- evaluate different manufacturing methods against given product and process requirements.
- define and design modern additive techniques in contrast to traditional manufacturing.
- assess and estimate the impact of current trends on manufacturing like cyber-physical systems to given manufacturing challenges and practical problems.
- apply modern processes like rapid prototyping, rapid tooling, and direct manufacturing.

Contents

1. Introduction to Manufacturing Methods
   - 1.1 Basic Concepts
   - 1.2 Historical Development of Manufacturing
   - 1.3 About the Long Tail
2. Manufacturing Methods
   - 2.1 Casting and Molding
   - 2.2 Shaping
   - 2.3 Machining
   - 2.4 Joining
   - 2.5 Coating

3. Additive Manufacturing and 3D printing
   - 3.1 Basics and Legal Aspects
   - 3.2 Material Extrusion
   - 3.3 Vat Polymerization
   - 3.4 Powder Bed Fusion
   - 3.5 Material Jetting
   - 3.6 Binder Jetting
   - 3.7 Direct Energy Deposition
   - 3.8 Sheet Lamination

4. Rapid Prototyping
   - 4.1 Definitions
   - 4.2 Strategical and Operative Aspects
   - 4.3 Application Scenarios

5. Rapid Tooling
   - 5.1 Definitions
   - 5.2 Direct and Indirect Methods
   - 5.3 Application Scenarios

6. Direct/Rapid Manufacturing
   - 6.1 Potentials and Requirements
   - 6.2 Implementation Examples

7. Cyber-Physical Production Systems
   - 7.1 Introduction
   - 7.2 Cyber-Physical Production Systems
   - 7.3 Impact on Design and Maintenance of Plants
   - 7.4 Dynamic Reconfiguration of Plants
   - 7.5 Application Examples

Literature
Compulsory Reading
Further Reading ▪ Anderson, C. (2012). Makers. The new industrial revolution . New York, NY: Crown Business. ▪ Gad, S. (2008). Implementing IT governance: A practical guide to global best practices in IT management . Reading: Van Haren Publishing. ▪ Gebhardt, A. (2012). Understanding additive manufacturing: Rapid prototyping – Rapid tooling – Rapid manufacturing . München/Cincinnati, OH: Hanser. ▪ Groover, M. P. (2012). Fundamentals of modern manufacturing: Materials, processes, and systems . Hoboken, NJ: John Wiley & Sons Inc.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Artificial Intelligence

Module Code: DLMIMWKI

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimaldauer: 1 Semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Ulrich Kerzel (Artificial Intelligence) / Prof. Dr. Tim Schlippe (Seminar: AI and Society)

Contributing Courses to Module

- Artificial Intelligence (DLMAIAI01)
- Seminar: AI and Society (DLMAISAIS01)

Module Exam Type

Module Exam	Split Exam
	Artificial Intelligence • Study Format "Fernstudium": Exam, 90 Minutes Seminar: AI and Society • Study Format "Fernstudium": Written Assessment: Research Essay

Weight of Module

see curriculum

Module Contents

Artificial Intelligence

- History of AI
- AI application areas
- Expert systems
- Neuroscience
- Modern AI systems

In this module, students will reflect on current societal and political implications of artificial intelligence. To this end, pertinent topics will be introduced via articles that are then critically evaluated by the students in the form of a written essay. A current list of topics is located in the Learning Management System.

Seminar: AI and Society

Learning Outcomes

Artificial Intelligence

On successful completion, students will be able to

- remember the historical developments in the field of artificial intelligence.
- analyze the different application areas of artificial intelligence.
- comprehend expert systems.
- apply Prolog to simple expert systems.
- comprehend the brain and cognitive processes from a neuro-scientific point of view.
- understand modern developments in artificial intelligence.

Seminar: AI and Society

On successful completion, students will be able to

- name selected current societal topics and issues in artificial intelligence.
- explain the influence and impact of artificial intelligence on societal, economic, and polital topics.
- transfer theoretically-acquired knowledge to real-world cases.
- treat in a scientific manner a select topic in the form of a written essay.
- critically question and discuss current societal and political issues arising from the recent advances in artificial intelligence methodology.
- develop own problem-solving skills and processes through reflection on the possible impact of their future occupation in the sector of artificial intelligence.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Data Science & Artificial Intelligence.	All Master Programmes in the IT & Technology field.

Artificial Intelligence

Course Code: DLMAIAI01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The quest for artificial intelligence has captured humanity's interest for many decades and has been an active research area since the 1960s. This course will give a detailed overview of the historical developments, successes, and set-backs in AI, as well as the development and use of expert systems in early AI systems.In order to understand cognitive processes, the course will give a brief overview of the biological brain and (human) cognitive processes and then focus on the development of modern AI systems fueled by recent developments in hard- and software. Particular focus will be given to discussion of the development of "narrow AI" systems for specific use cases vs. the creation of general artificial intelligence.The course will give an overview of a wide range of potential application areas in artificial intelligence, including industry sectors such as autonomous driving and mobility, medicine, finance, retail, and manufacturing.

Course Outcomes

On successful completion, students will be able to

- remember the historical developments in the field of artificial intelligence.
- analyze the different application areas of artificial intelligence.
- comprehend expert systems.
- apply Prolog to simple expert systems.
- comprehend the brain and cognitive processes from a neuro-scientific point of view.
- understand modern developments in artificial intelligence.

Contents

1. History of AI
   - 1.1 Historical Developments
   - 1.2 AI Winter
   - 1.3 Notable Advances in AI
2. Expert Systems
   - 2.1 Overview Over Expert Systems
   - 2.2 Introduction to Prolog
3. Neuroscience
   - 3.1 The (Human) Brain
   - 3.2 Cognitive Processes

4. Modern AI Systems
   - 4.1 Recent Developments in Hard- and Software
   - 4.2 Narrow vs General AI
   - 4.3 NLP and Computer Vision

5. AI Application Areas
   - 5.1 Autonomous Vehicles & Mobility
   - 5.2 Personalized Medicine
   - 5.3 FinTech
   - 5.4 Retail & Industry

Literature

Compulsory Reading

Further Reading

- Bear, F., Barry, W., & Paradiso, M. (2006). Neuroscience: Exploring the brain (3rd ed.). Baltimore, MD: Lippincott Williams and Wilkins.
- Bratko, I. (2011). Prolog programming for artificial intelligence (4th ed.). Hoboken, NJ: Pearson.
- Jackson, P. (1998). Introduction to expert systems (3rd ed.). Chicago, IL: Addison Wesley Longman.
- Nilsson, N. (2009). The quest for artificial intelligence. Cambridge: Cambridge University Press.
- Russel, S., & Norvig, P. (2009). Artificial intelligence: A modern approach (3rd ed.). Malaysia: Pearson.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Seminar: AI and Society

Course Code: DLMAISAIS01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

In the current decade, impressive advances have been achieved in the field of artificial intelligence. Several cognitive tasks like object recognition in images and video, natural language processing, game strategy, and autonomous driving and robotics are now being performed by machines at unprecedented levels of ability. This course will examine some of societal, economic, and political implications of these developments.

Course Outcomes

On successful completion, students will be able to

- name selected current societal topics and issues in artificial intelligence.
- explain the influence and impact of artificial intelligence on societal, economic, and polital topics.
- transfer theoretically-acquired knowledge to real-world cases.
- treat in a scientific manner a select topic in the form of a written essay.
- critically question and discuss current societal and political issues arising from the recent advances in artificial intelligence methodology.
- develop own problem-solving skills and processes through reflection on the possible impact of their future occupation in the sector of artificial intelligence.

Contents

- The seminar covers current topics concerning the societal impact of artificial intelligence. Each participant must create a seminar paper on a topic assigned to him/her. A current list of topics is given in the Learning Management System.

Literature
Compulsory Reading
Further Reading ▪ Boddington, P. (2017). Towards a code of ethics for artificial intelligence (1st ed.). New York, NY: Springer International Publishing. ▪ Bostrom, N. (2016). Superintelligence: Paths, dangers, strategies. Oxford: Oxford University Press. ▪ Tegmark, M. (2018). Life 3.0: Being human in the age of artificial intelligence. New York, NY: Penguin. ▪ Wachter-Boettcher, S. (2017). Technically wrong: Sexist apps, biased algorithms, and other threats of toxic tech. New York, NY: W. W. Norton & Company.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Seminar

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Research Essay

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
120 h		30 h			150 h

Instructional Methods
The learning materials include guidelines, vodcasts, online tutorials, and forums. This range of learning materials is offered to students so they can study at a time, place, and pace that best suits their circumstances and individual learning style.

Data Science and Analytics

Module Code: DLMBDSA

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Ulrich Kerzel (Data Science) / Prof. Dr. Ulrich Kerzel (Analytical Software and Frameworks)

Contributing Courses to Module

- Data Science (DLMBDSA01)
- Analytical Software and Frameworks (DLMBDSA02)

Module Exam Type

Module Exam	Split Exam
	Data Science • Study Format "Fernstudium": Exam, 90 Minutes Analytical Software and Frameworks • Study Format "Fernstudium": Written Assessment: Written Assignment

Weight of Module

see curriculum

Module Contents

Data Science

- Introduction to data science
- Use cases and performance evaluation
- Pre-processing of data
- Processing of data
- Selected mathematical techniques
- Selected artificial intelligence techniques

Analytical Software and Frameworks

- Introduction to analytical software and frameworks
- Data storage
- Statistical modeling
- Machine learning
- Cloud computing platforms
- Distributed computing
- Database technologies

Learning Outcomes

Data Science

On successful completion, students will be able to

- identify use cases and evaluate the performance of data-driven approaches
- comprehend how data are pre-processed in preparation for analysis.
- develop typologies for data and ontologies for knowledge representation.
- decide for appropriate mathematical algorithms to utilize data analysis for a given task.
- understand the value, applicability, and limitations of artificial intelligence for data analysis.

Analytical Software and Frameworks

On successful completion, students will be able to

- comprehend how cloud computing and distributed computing support the field of data analytics.
- understand in-memory database technologies for real-time analytics.
- apply advanced statistics and machine learning solutions to solve data analysis problems.
- compare the capabilities and limitations of the presented software solutions.

Links to other Modules within the Study Program	Links to other Study Programs of IUBH
This module is similar to other modules in the field(s) of Data Science & Artificial Intelligence	All Master Programmes in the IT & Technology field(s)

Data Science

Course Code: DLMBDSA01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The course Data Science provides the framework to create value from data. After an introduction the course covers how to identify suitable use cases and evaluate the performance of data-driven methods. The course covers techniques for the technical processing of data and then introduces advanced mathematical techniques and selected methods from artificial intelligence that are used to analyze data and make predictions.

Course Outcomes

On successful completion, students will be able to

- identify use cases and evaluate the performance of data-driven approaches
- comprehend how data are pre-processed in preparation for analysis.
- develop typologies for data and ontologies for knowledge representation.
- decide for appropriate mathematical algorithms to utilize data analysis for a given task.
- understand the value, applicability, and limitations of artificial intelligence for data analysis.

Contents

1. Introduction to Data Science
   - 1.1 Overview of Data Science
   - 1.2 Terms and Definitions
   - 1.3 Applications & Notable Examples
   - 1.4 Sources of Data
   - 1.5 Structured, Unstructured, Streaming
   - 1.6 Typical Data Sources and their Data Type
   - 1.7 The 4 V's of Data: Volume, Variety, Velocity, Veracity
   - 1.8 Introduction to Probability Theory
   - 1.9 What Are Probabilities and Probability Distributions
   - 1.10 Introduction to Bayesian Statistics
   - 1.11 Relation to Data Science: Prediction as a Probability

2. Use Cases and Performance Evaluation
   - 2.1 Identification of Use Cases for Data Science
   - 2.2 Identifying Data Science Use Cases
   - 2.3 From Prediction to Decision: Generating Value from Data Science
   - 2.4 Evaluation of Predictions
   - 2.5 Overview of Relevant Metrics
   - 2.6 Business-centric Evaluation: the Role of KPIs
   - 2.7 Cognitive Biases and Decision-making Fallacies

3. Pre-processing of Data
   - 3.1 Transmission of Data
   - 3.2 Data Quality and Cleansing of Data
   - 3.3 Transformation of Data (Normalization, Aggregation)
   - 3.4 Reduction of Data Dimensionality
   - 3.5 Data Visualisation

4. Processing of Data
   - 4.1 Stages of Data Processing
   - 4.2 Methods and Types of Data Processing
   - 4.3 Output Formats of Processed Data

5. Selected Mathematical Techniques
   - 5.1 Linear Regression
   - 5.2 Principal Component Analysis
   - 5.3 Clustering
   - 5.4 Time-series Forecasting
   - 5.5 Overview of Further Approaches

6. Selected Artificial Intelligence Techniques
   - 6.1 Support Vector Machines
   - 6.2 Neural Networks and Deep Learning
   - 6.3 Feed-forward Networks
   - 6.4 Recurrent Networks and Memory Cells
   - 6.5 Convolutional Networks
   - 6.6 Reinforcement Learning
   - 6.7 Overview of Further Approaches

Literature
Compulsory Reading
Further Reading ▪ Agrawal, A. (2018). Prediction machines: The simple economics of artificial intelligence. Brighton, MA: Harvard Business Review. ▪ Hu, F. (2016). Big data: storage, sharing, and security. Boca Raton, FL: Auerbach Publications. ▪ Ciaburro, G., & Venkateswaran, B. (2017). Neural networks with R: Smart models using CNN, RNN, deep learning, and artificial intelligence principles. Birmingham: Packt Publishing. ▪ Kepner, J., & Jananthan, H. (2018). Mathematics of big data: Spreadsheets, databases, matrices, and graphs. Cambridge, MA: MIT Press. ▪ Russell, S. J., & Norvig, P. (2015). Artificial intelligence: A modern approach. New York, NY: Pearson Education. ▪ Géron, A. (2017). Hands-on machine learning with Scikit-Learn and TensorFlow. Sebastopol, CA: O'Reilly Media, Inc.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Analytical Software and Frameworks

Course Code: DLMBDSA02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMBDSA01

Course Description

Analytical Software and Frameworks provides insight into contemporary software and platforms solutions for data analytics in business. The course introduces relevant frameworks and software used in modern data science projects. Commercial and open-source for cloud computing, distributed computing and machine learning, as well as a commercial development platform for in-memory database analytics, are covered. Additional software solutions may be covered by the lecturer as convenient.

Course Outcomes

On successful completion, students will be able to

- comprehend how cloud computing and distributed computing support the field of data analytics.
- understand in-memory database technologies for real-time analytics.
- apply advanced statistics and machine learning solutions to solve data analysis problems.
- compare the capabilities and limitations of the presented software solutions.

Contents

1. Introduction
   - 1.1 Software Systems
   - 1.2 Frameworks
   - 1.3 Distributed Computing
   - 1.4 Databases and Data Warehousing
2. Data Storage
   - 2.1 Data Clustering
   - 2.2 Data Replication
   - 2.3 Data Indexing
   - 2.4 Data Warehousing
3. Statistical Modeling Frameworks
   - 3.1 The R Project for Statistical Computing
   - 3.2 The Python Ecosystem

4. Machine Learning & Artificial Intelligence
   - 4.1 Overview of Modern Machine Learning Frameworks
   - 4.2 Introduction to TensorFlow & Keras

5. Cloud Computing Platforms & On-Premise Solutions
   - 5.1 Advantages and Disadvantages of Cloud, On-premise, and Edge Solutions
   - 5.2 Overview of Cloud Computing Solutions

6. Distributed Computing
   - 6.1 Overview of Distributed Computing Approaches
   - 6.2 Overview of Streaming Approaches
   - 6.3 Other Solutions

7. Database Technologies
   - 7.1 Overview of Database Approaches
     - 7.1.1 Row-based versus Column-based
     - 7.1.2 In Memory DB
     - 7.1.3 Relational DB versus noSQL
     - 7.1.4 Timeseries DB
   - 7.2 Overview of Database Implementations

Literature

Compulsory Reading

Further Reading

- Chambers, B., & Zaharia, M. (2018). Spark: The definitive guide: Big data processing made simple. Newton, MA: O'Reilly Media.
- Elmasri, R., & Navathe, S. B. (2015). Fundamentals of database systems (7th ed.). New York, NY: Pearson.
- Lander, J. P. (2017). R for everyone: Advanced analytics and graphics (2nd ed.). Boston, MA: Addison-Wesley Professional.
- Lyubimov, D., & Palumbo, A. (2016). Apache Mahout: Beyond MapReduce. North Charleston, SC: CreateSpace Independent Publishing.
- Modi, R. (2017). Azure for architects: Implementing cloud design, DevOps, IoT, and serverless solutions on your public cloud. Birmingham: Packt Publishing.
- Valliappa Lakshmanan, V. (2018). Data science on the Google Cloud Platform: Implementing end-to-end real-time data pipelines: From Ingest to machine learning. Newton, MA: O'Reilly Media.
- Walkowiak, S. (2016). Big data analytics with R: Utilize R to uncover hidden patterns in your big data. Birmingham: Packt Publishing.
- White, T. (2015). Hadoop: The definitive guide: Storage and analysis at Internet scale (4th ed.). Newton, MA: O'Reilly Media.
- Wittig, A., & Wittig, M. (2018). Amazon Web Services in action (2nd ed.). Shelter Island, NY: Manning Publications.
- Géron, A. (2017). Hands-on machine learning with Scikit-Learn and TensorFlow. Sebastopol, CA: O'Reilly Media, Inc.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Written Assignment

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
110 h		20 h	20 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☐ Exam Template	

Supply Chain and Sourcing Management

Module Code: MWCH_E

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Hubert Vogl (Global Supply Chain Management) / Prof. Dr. Hubert Vogl (Supply Chain Risk Management and Controlling)

Contributing Courses to Module

- Global Supply Chain Management (MWCH01_E)
- Supply Chain Risk Management and Controlling (MWCH02_E)

Module Exam Type

Module Exam	Split Exam
	Global Supply Chain Management • Study Format "Fernstudium": Exam, 90 Minutes Supply Chain Risk Management and Controlling • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

Global Supply Chain Management

- Value networks - motives, typologies, goals
- Directions of impact of SCM strategies

Supply Chain Risk Management and Controlling

- SCM instruments
- Controlling systems in value networks
- Risk management in value networks

Learning Outcomes

Global Supply Chain Management

On successful completion, students will be able to

- specify the goals and tasks of supply chain management and how it differs from pure logistics management.
- specify the tools and instruments for designing SCM.
- list possible measures to avoid obstacles in the implementation and operation of supply chains.
- assess the potential impact of coordinating collaborations on supply chain management.
- name the basic supply, disposal and recycling strategies and indicate their contents.
- indicate the motives for quality management in SCM and the methods and instruments used.
- assess which business software can support and control the functions of the supply chain.

Supply Chain Risk Management and Controlling

On successful completion, students will be able to

- assess tasks of the controlling department and evaluate problems in implementation of controlling systems in supply chains.
- assess the significance of key figures in supply chain controlling and know how these are used.
- reflect on instruments of SC controlling and determine combinations of classical and innovative controlling instruments.
- determine when SCM software is used in controlling and what is required for their implementation.
- explain the tools of controlling and apply them in practice.
- name and explain options that influence the success of a supply chain, why risk management is carried out within supply chains and compatible strategies for supply chains.
- understand the organizational design with System Dynamics and the use in the supply chain management.

Links to other Modules within the Study Program	Links to other Study Programs of IUBH
This module is similar to other modules in the fields of Transportation & Logistics	All Master Programs in the Transport & Logistics fields

Global Supply Chain Management

Course Code: MWCH01_E

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

A problem-centered understanding of global value networks requires knowledge of their motives and goals. Furthermore, in view of the apparent diversity, it seems particularly useful to systematize these networks in certain typologies. On the basis of such systematizations it is then possible to systematize the spectrum of strategically relevant questions and design options in the field of SCM in a differentiated form. In addition, this also makes it possible to present the instrumental categories of SCM that are particularly relevant in this context.

Course Outcomes

On successful completion, students will be able to

- specify the goals and tasks of supply chain management and how it differs from pure logistics management.
- specify the tools and instruments for designing SCM.
- list possible measures to avoid obstacles in the implementation and operation of supply chains.
- assess the potential impact of coordinating collaborations on supply chain management.
- name the basic supply, disposal and recycling strategies and indicate their contents.
- indicate the motives for quality management in SCM and the methods and instruments used.
- assess which business software can support and control the functions of the supply chain.

Contents

1. Motives and Effects of Logistics Value Networks
   - 1.1 What does Supply Chain Management mean?
   - 1.2 What is logistics management?
   - 1.3 Service providers in the supply chain
   - 1.4 Importance of Supply Chain Management
2. Typologies of SCM and design models
   - 2.1 Supply chain strategy
   - 2.2 Instruments for supply chain strategies
   - 2.3 Inventory Reduction in Warehouse Management
   - 2.4 Freight cost reduction within the framework of the transport cost policy
   - 2.5 Efficient Replenishment

3. Problem-oriented concepts and corresponding management concepts
   - 3.1 Problems in the supply chain
   - 3.2 Interfaces in the Supply Chain
   - 3.3 The Bullwhip Effect
   - 3.4 Collaborative Planning, Forecasting and Replenishment (CPFR)

4. Tasks and goals of the SCM
   - 4.1 Tasks in Supply Chain Management
   - 4.2 Goals of Supply Chain Management
   - 4.3 Sustainable Supply Chain Management (SSCM

5. Cooperation and coordination
   - 5.1 The Corporate Strategy
   - 5.2 Sensible corporate strategies: Instruments and Methods
   - 5.3 Strategic alliances in the context of supply chain management
   - 5.4 Requirements for successful cooperation
   - 5.5 Bundling of activities and process adjustments in cooperations

6. Supply, disposal and recycling strategies
   - 6.1 Supply strategies
   - 6.2 Disposal strategies
   - 6.3 Recycling, reuse/recycling and the corresponding strategies

7. Quality assurance
   - 7.1 Quality management systems
   - 7.2 Quality Assurance in Supply Chain Management
   - 7.3 Methods in quality management
   - 7.4 Instruments in organizational design

8. Information retrieval
   - 8.1 Information Technology in Supply Chain Management
   - 8.2 Business Software
   - 8.3 The Balanced Scorecard as a control instrument

Literature

Compulsory Reading

Further Reading

- Arndt, H. (2010): Supply Chain Management. Optimization of logistic processes. 5th edition, Gabler, Wiesbaden.
- Chopra, S./Meindl, P. (2007): Supply Chain Management. Strategy, Planning and Operation. 3rd edition, Pearson, New Jersey.
- Cohen, S./Roussel, J. (2006): Strategic Supply Chain Management. Springer, Berlin/ Heidelberg.
- Corsten, H./Gössinger, R. (2008): Introduction to Supply Chain Management. 2nd edition, Oldenbourg, Munich.
- Handfield, R. B./Nichols, E. L. (2008): Introduction to Supply Chain Management. Prentice Hall, Upper Saddle River, NJ.
- Petry, T. (2006): Network strategy. Core of an integrated management of corporate networks. Gabler, Wiesbaden.
- Pfohl, H. C. (2009): Logistics systems. Fundamentals of Business Administration. 8th Edition, Springer, Berlin.
- Schulte, C. (2009): Logistics. Ways to optimize the supply chain. 5th edition, Vahlen, Munich.
- Simchi-Levi, D./Kaminsky, P./Simchi-Levi, E. (2008): Designing and Managing the Supply Chain. Concepts, Strategies and Case Studies. 3rd edition, McGraw-Hill, Boston.
- Werner, H. (2010): Supply Chain Management. Basics, strategies, instruments. Springer, Berlin.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Supply Chain Risk Management and Controlling

Course Code: MWCH02_E

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

Global value networks prove to be particularly dynamic and sometimes fragile constructions. This observation draws attention to two important aspects of SCM: On the one hand, the need to develop an effective and efficient controlling system for such supply chains. The controlling information generated via key figure systems can make important contributions to the stabilization and optimization of the value-added network. On the other hand, to the necessity of a systematic risk management, with the focus on early identification and future prospects.

Course Outcomes

On successful completion, students will be able to

- assess tasks of the controlling department and evaluate problems in implementation of controlling systems in supply chains.
- assess the significance of key figures in supply chain controlling and know how these are used.
- reflect on instruments of SC controlling and determine combinations of classical and innovative controlling instruments.
- determine when SCM software is used in controlling and what is required for their implementation.
- explain the tools of controlling and apply them in practice.
- name and explain options that influence the success of a supply chain, why risk management is carried out within supply chains and compatible strategies for supply chains.
- understand the organizational design with System Dynamics and the use in the supply chain management.

Contents

1. Basics of controlling in and of supply chains
   - 1.1 Conceptual design of controlling in supply chain management systems
   - 1.2 The importance of controlling in the supply chain
   - 1.3 Cost Tracking
   - 1.4 Different types of supply chain controlling
2. Key figure systems in the supply chain 2.1 Meaning of key figures
   - 2.1 Types of key figures in the supply chain
   - 2.2 Visualization of key figures

3. Instruments in Supply Chain Controlling
   - 3.1 SCOR models as control instruments
   - 3.2 From traditional to innovative instruments

4. Controlling the Supply Chain in Connection with Information Technology
   - 4.1 ERP Systems
   - 4.2 CRM and SCM Systems
   - 4.3 Case study for the implementation of an SCM system
   - 4.4 Success Factors for the Use of SCM Software

5. Tools of Controlling in the Supply Chain
   - 5.1 Activity-Based Costing
   - 5.2 Benchmarking

6. Risk Management in the Supply Chain
   - 6.1 Risks in the Supply Chain
   - 6.2 Sources of risk in the supply chain
   - 6.3 Risks and Business Success

7. Risk policy strategies in the supply chain
   - 7.1 Risk Management within the Supply Chain
   - 7.2 Risk Analysis
   - 7.3 Risk Assessment
   - 7.4 Risk provisioning

8. Organizational design through systems thinking and simulation approaches
   - 8.1 Fundamentals of organizational design
   - 8.2 System Dynamics: System thinking and simulation
   - 8.3 Active Data Warehousing as a technological approach for supply chain controlling and risk management

Literature
Compulsory Reading
Further Reading ▪ Chopra, S./Meindl, P. (2007): Supply Chain Management. Strategy, Planning and Operation. 3rd edition, Pearson, New Jersey. ▪ Cohen, S./Roussel, J. (2006): Strategic Supply Chain Management. Springer, Berlin/ Heidelberg. ▪ Corsten, H./Gössinger, R. (2008): Introduction to Supply Chain Management. 2nd edition, Oldenbourg, Munich. ▪ Handfield, R. B./Nichols, E. L. (2008): Introduction to Supply Chain Management. Prentice Hall, Upper Saddle River, NJ. ▪ Petry, T. (2006): Network strategy. Core of an integrated management of corporate networks. Gabler, Wiesbaden. ▪ Pfohl, H. C. (2009): Logistics systems. Fundamentals of Business Administration. 8th edition, Springer, Berlin. ▪ Schulte, C. (2009): Logistics. Ways to optimize the supply chain. 5th edition, Vahlen, Munich. ▪ Simchi-Levi, D./Kaminsky, P./Simchi-Levi, E. (2008): Designing and Managing the Supply Chain. Concepts, Strategies and Case Studies. 3rd edition, McGraw-Hill, Boston.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

MWCH02_E

Consumer Behavior and Research

Module Code: DLMBCBR

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimaldauer: 1 Semester	WiSe/SoSe	English

Module Coordinator

Caterina Fox (International Consumer Behavior) / Caterina Fox (Applied Marketing Research)

Contributing Courses to Module

- International Consumer Behavior (DLMBCBR01)
- Applied Marketing Research (DLMBCBR02)

Module Exam Type

Module Exam	Split Exam
	International Consumer Behavior • Study Format "Fernstudium": Exam, 90 Minutes Applied Marketing Research • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

International Consumer Behavior

- Consumer Behavior
- The Consumer Decision-Making Process
- Internal Influences on Consumer Behavior
- External Influences on Consumer Behavior
- International Consumer Behavior
- International Marketing Strategy and Consumer Behavior

Applied Marketing Research

- The Role of Marketing Research in Managerial Decision-Making
- Problem Definition and the Marketing Research Process
- Secondary Data and Qualitative Research
- Survey Research and the Concept of Measurement
- Observational Research
- Sampling Issues, Data Processing, and Fundamental Data Analysis
- Communicating the Research Results

Learning Outcomes

International Consumer Behavior

On successful completion, students will be able to

- outline the purchase decision-making process undertaken by the consumer.
- describe the internal and external influences on the consumer decision-making processes.
- identify the different research methods available to companies to collect relevant data regarding their consumers and their behavior
- develop a plan to generate required market research data regarding consumer behavior and decision-making.
- be able to generate, analyze, interpret and report relevant data regarding consumers.
- present the key concepts characterizing international consumer behavior and discuss their impact on global marketing strategies.

Applied Marketing Research

On successful completion, students will be able to

- recognize and promote the importance of marketing research methodologies in supporting key marketing management decisions.
- identify some of the challenges of marketing research in an international environment.
- identify appropriate analysis tools for a given marketing related problem on a strategic and operational level.
- identify errors made in the research process.
- Outline the stages of the marketing research process.
- identify ethics problems in a marketing research situation and propose an ethically sound approach.
- propose a research design to study a particular research question.
- compare and contrast different research methods.
- recommend good practice for a variety of research techniques.
- Design questionnaires with sound measurement properties.
- interpret results of advanced marketing research efforts.
- transfer the gained insights into their future international work environment.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field(s) Marketing & Sales	All Master Programmes in the Marketing field(s)

International Consumer Behavior

Course Code: DLMBCBR01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

In a global economy characterized by greater competition, companies operating internationally need comprehensive market-driven strategies to survive in the market place. The course provides students with the relevant concepts for understanding the international environment of the company with focus on the demand side/the consumer. Students learn how differences in culture, economic systems, and political environments impact consumers' behavior in terms of decision-making in the fields of acquisition, consumption, and disposal of products, services, experiences, and ideas.

Course Outcomes

On successful completion, students will be able to

- outline the purchase decision-making process undertaken by the consumer.
- describe the internal and external influences on the consumer decision-making processes.
- identify the different research methods available to companies to collect relevant data regarding their consumers and their behavior
- develop a plan to generate required market research data regarding consumer behavior and decision-making.
- be able to generate, analyze, interpret and report relevant data regarding consumers.
- present the key concepts characterizing international consumer behavior and discuss their impact on global marketing strategies.

Contents

1. Consumer Behavior
   - 1.1 Consumer Behavior and International Marketing
   - 1.2 Consumer Decision-Making in the Marketplace
2. The Consumer Decision-Making Process
   - 2.1 The Pre-Purchase Stage
   - 2.2 The Purchase Stage
   - 2.3 The Post-Purchase Stage

3. Internal Influences on Consumer Behavior
   - 3.1 Motives and Motivation
   - 3.2 Perception
   - 3.3 Attitude

4. External Influences on Consumer Behavior
   - 4.1 Culture
   - 4.2 Subculture
   - 4.3 Groups and Families

5. International Consumer Behavior
   - 5.1 Cultural Dimensions
   - 5.2 The Influence of Social Media on Consumer Decision-Making

6. International Marketing Strategy and Consumer Behavior
   - 6.1 International Market Segmentation and Product Positioning
   - 6.2 Consumer Behavior and Product Strategy
   - 6.3 Consumer Behavior and Communication Strategy
   - 6.4 Consumer Behavior and Pricing Strategy
   - 6.5 Consumer Behavior and Distribution Strategy

Literature

Compulsory Reading

Further Reading

- Schiffman, L. G., & Kanuk, L. L. (2014). Consumer behavior. Frenchs Forest, N.S.W.: Pearson Education Australia.
- Solomon, M. (2016). Consumer behavior: Buying, having, and being (12th ed.). New York City, NY: Pearson.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Applied Marketing Research

Course Code: DLMBCBR02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMBCBR01

Course Description

In a global economy characterized by greater competition, companies operating internationally need comprehensive market-driven strategies in order to survive in the market place. The course allows students to explore marketing research, the information-gathering arm of marketing practice. The topic is viewed primarily from the perspective of a consumer of marketing research, i.e. a busy manager who needs information to guide decision making. Given their role in decision-making regarding marketing and sourcing marketing research, it is helpful for managers to understand how producers of research approach the process. This background will help you as a manager to become a better-informed consumer of research who is able to participate in research design, evaluate the quality of marketing information that crosses your desk, and conduct marketing research projects yourself when appropriate.

Course Outcomes

On successful completion, students will be able to

- recognize and promote the importance of marketing research methodologies in supporting key marketing management decisions.
- identify some of the challenges of marketing research in an international environment.
- identify appropriate analysis tools for a given marketing related problem on a strategic and operational level.
- identify errors made in the research process.
- Outline the stages of the marketing research process.
- identify ethics problems in a marketing research situation and propose an ethically sound approach.
- propose a research design to study a particular research question.
- compare and contrast different research methods.
- recommend good practice for a variety of research techniques.
- Design questionnaires with sound measurement properties.
- interpret results of advanced marketing research efforts.
- transfer the gained insights into their future international work environment.

Contents

1. The Role of Marketing Research in Managerial Decision-Making
   - 1.1 The Importance of Marketing Research in Decision-Making
   - 1.2 The Institutions Involved in Marketing Research
   - 1.3 Common Challenges in Conducting Marketing Research

Literature
Compulsory Reading
Further Reading ▪ Aaker, D. A., Kumar, V., & Day, G. S. (2012). Marketing research (11th ed.). Hoboken, N.J. Wiley & Sons. ▪ Anderson, D. R., Sweeney, D. J., Williams, T. A., & Anderson, D. R. (2016). Statistics for business and economics (13th ed.). Nashville, TN: South-Western College. ▪ Churchill, G. A., & Iacobucci, D. (2009). Marketing research: Methodological foundations (10th ed.). Nashville, TN: South-Western College. ▪ Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). Multivariate data analysis: A global perspective (7th ed., New International). Upper Saddle River, NJ: Pearson. ▪ Malhotra, N. K. (2009). Marketing research: An applied orientation (6th ed.). Upper Saddle River, NJ: Prentice Hall. ▪ Solomon, M. (2016). Consumer behaviour: Buying, having, and being (12th ed.). New York City, NY: Pearson

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Accounting

Module Code: DLMBACCE

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Gerhard Sälzer (Advanced Management Accounting & Control) / Prof. Dr. Gerhard Sälzer (Current Issues in Accounting)

Contributing Courses to Module

- Advanced Management Accounting & Control (DLMBACCE01)
- Current Issues in Accounting (DLMBACCE02)

Module Exam Type

Module Exam	Split Exam
	Advanced Management Accounting & Control • Study Format "Fernstudium": Exam, 90 Minutes Current Issues in Accounting • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

Advanced Management Accounting & Control

- Controllership and the CFO: Core Competencies, Organization, and Strategies
- Contingency Theory and Management Accounting and Control
- Levers of Control
- Behavioral Management Accounting and Control
- Transfer Pricing, and Corporate and Shared Service Centers
- Balance Scorecard, Executive Remuneration, and Control
- Product Life Cycle, Business Strategy, and Control

Current Issues in Accounting

- Preparation of Financial Statements
- Optimization of Receivables and Inventory
- Optimization of Liabilities and Equity
- Current Issues in Financial Accounting
- Valuing Businesses
- Capital Budgeting 154
- Financial Modeling and Valuation

Learning Outcomes

Advanced Management Accounting & Control

On successful completion, students will be able to

- Describe how controllership is set up in international companies.
- Explain how management accounting and control have to consider the contingencies under which they are set up.
- Design management accounting and control processes specific to the contingencies characterizing a specific company.
- Utilize management accounting and control processes to address strategic uncertainties and support organizational learning.
- Design, evaluate, and optimize management accounting and control systems and practices to influence the behavior of managers and employees.
- Identify the importance of transfer pricing for multinational groups.
- Discuss the role of the CFO in an international company.

Current Issues in Accounting

On successful completion, students will be able to

- explain selected management and financial accounting issues.
- Analyze relevant issues specific to the level of financial accounting established in a company.
- Identify and explain the specific tasks of a CFO with regards to the different functions of financial accounting and financial management.
- Describe the regulatory changes following the economic crisis, e.g. Basel III, and identify their impact of financial accounting and control.
- Discuss recent developments concerning IFRS.
- Develop processes and strategic plans that recognize the increased importance of working capital optimization and capital restructuring.
- Identify the functions of a chief treasurer or controller in a multinational corporation.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field(s) of Finance & Tax Accounting	All Master Programmes in the Business & Management field(s)

Advanced Management Accounting & Control

Course Code: DLMBACCE01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

This course deals with advanced aspects of management accounting and control. Students will understand how controllership is set up in international companies and explore the contingencies of management accounting and control, e.g. strategy, organizational life cycle phase, size, and ownership structure. The course also introduces the concept of the levers of control and highlights not only the traditional feedback and constraining function of control systems, but also the learning and expanding function of these control levers. As management accounting and control ultimately aims to influence the behavior of managers and employees when implementing the organization's goals, behavioral aspects must be considered. Constraints such as limitations concerning the information processing capabilities of managers have to be taken into account when designing management control systems. Furthermore, as companies grow larger and operate in different countries, transfer pricing systems for controlling corporate and shared service centers have to be set up. Upon completion of this course, students will also understand the consequences of different approaches to transfer pricing.

Course Outcomes

On successful completion, students will be able to

- Describe how controllership is set up in international companies.
- Explain how management accounting and control have to consider the contingencies under which they are set up.
- Design management accounting and control processes specific to the contingencies characterizing a specific company.
- Utilize management accounting and control processes to address strategic uncertainties and support organizational learning.
- Design, evaluate, and optimize management accounting and control systems and practices to influence the behavior of managers and employees.
- Identify the importance of transfer pricing for multinational groups.
- Discuss the role of the CFO in an international company.

Contents

Literature

Compulsory Reading

Further Reading

- Atkinson, A. A., Kaplan, R. S., Matsumara, E. M., & Young, S. M. (2012). Management accounting: Information for decision making and strategy execution (6th ed.). Upper Saddle River, NJ: Pearson.
- Bangemann, T. O. (2005). Shared services in finance and accounting . Aldershot, Hants, England: Gower.
- Buytendijk, F. (2010). Dealing with dilemmas: Where business analytics fall short . Chichester: Wiley.
- Chenhall, R. H. (2007). Theorizing contingencies in management control systems research. Handbooks of Management Accounting Research, 2 , 163–205.
- Davila, A., & Foster, G. (2005). Management accounting systems adoption decisions: Evidence and performance implications from early-stage/startup companies. The Accounting Review, 80 (4), 1039–1068.
- Lovallo, D., & Kahnemann, D. (2003). Delusions of success: How optimism undermines executives' decisions. Harvard Business Review, 81 (7), 56–63.
- Merchant, K. A., & Pick, K. (2010). Blind spots, biases and other pathologies in the boardroom . New York: Business Expert Press.
- Schuster, P., & Clarke, P. (2010). Transfer prices: Functions, types and behavioral implications. Management Accounting Quarterly, 11 (2), 22–32.
- Tarasovich, B., & Lyons, B. (2009). Finance flies high: How Unilever redesigned its finance function to build value and drive growth. Strategic Finance, 91(5), 25–29.
- Tuomela, T. (2005). The interplay of different levers of control: A case study of introducing a new performance measurement system. Management Accounting Research, 16 (3), 293–320.
- Weber, J., & Nevries, P. (2010). Drivers of successful controllership: Activities, people, and connecting with management . New York: Business Expert Press.
- Wickramasinghe, D., & Alawattage, C. (2007). Towards contingency theory of management accounting. Management accounting change: Approaches and perspectives , 381–407. London: Routledge.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Current Issues in Accounting

Course Code: DLMBACCE02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMBACCE01

Course Description

Management accounting and financial accounting are constantly changing and adapting to internal and external circumstances. Financial accounting according to IFRS is continually evolving; developments occur in accounting rules and instruments for financial management are constantly emerging. Following the financial and economic crisis in 2008, accounting changed significantly following the introduction of additional regulatory rules and operating requirements. This course gives students an insight into selected issues and provides practical examples in management accounting and financial accounting. Students are introduced to specific tasks of a CFO with regard to accounting and financial management. The course will also facilitate students to develop an in-depth understanding of working capital optimization and capital restructuring. Finally, students will apply their financial and management accounting knowledge in an integrated financial modeling exercise.

Course Outcomes

On successful completion, students will be able to

- explain selected management and financial accounting issues.
- Analyze relevant issues specific to the level of financial accounting established in a company.
- Identify and explain the specific tasks of a CFO with regards to the different functions of financial accounting and financial management.
- Describe the regulatory changes following the economic crisis, e.g. Basel III, and identify their impact of financial accounting and control.
- Discuss recent developments concerning IFRS.
- Develop processes and strategic plans that recognize the increased importance of working capital optimization and capital restructuring.
- Identify the functions of a chief treasurer or controller in a multinational corporation.

Contents

1. Preparation of Financial Statements
    - 1.1 Accrual and Deferral Concepts for Recording Transactions
    - 1.2 End-of-Period Adjustments and the Use of Accounting Estimates
    - 1.3 Preparation of Financial Statements and the Classified Balance Sheet
    - 1.4 The Accrual Basis of Accounting and the Interpretation of Financial Statements
    - 1.5 Financial Analysis and the Company's Liquidity: Working Capital Ratio, Current Ratio, and Quick Ratio

2. Optimization of Receivables and Inventory
   - 2.1 Receivables and Uncollectibles
   - 2.2 Accounting for Receivables and Uncollectibles
   - 2.3 Inventories Classification
   - 2.4 Inventory Cost Flow Assumptions and Their Impact on Financial Statements
   - 2.5 Financial Analysis: Accounts Receivable and Inventory Turnover Ratios

3. Optimization of Liabilities and Equity
   - 3.1 Financing Using Current Liabilities, Notes Payable, and Contingencies
   - 3.2 Long-Term Sources of Finance
   - 3.3 Debt and Equity Financing and Earnings Per Share
   - 3.4 Financial Statement Analysis Using Price-Earnings Ratio

4. Current Issues in Financial Accounting
   - 4.1 International Financial Reporting Standards (IFRS)
   - 4.2 Principle- Versus Rule-Based Standards and IFRS Fair Value Measures
   - 4.3 Specific IFRS Standards
   - 4.4 Financial Statement Presentation under IFRS
   - 4.5 Integrated Revenue Recognition and the Implications of Adopting IFRS

5. Valuing Businesses
   - 5.1 Financial Statements and Valuation
   - 5.2 Accrual Accounting and Valuation: Pricing Book Value
   - 5.3 Accrual Accounting and Valuation: Pricing Earnings
   - 5.4 Business Valuation Methods in Practice
   - 5.5 Corporate Restructuring, Corporate Governance, and Auditor's Role in Firm Valuation

6. Capital Budgeting
   - 6.1 Capital Budgeting Decisions
   - 6.2 Non-Discounting Models: Payback and Accounting Rate of Return
   - 6.3 Discounting Models: The Net Present Value (NPV) Method and Internal Rate of Return (IRR)
   - 6.4 NPV Versus IRR for Selecting Mutually Exclusive Projects
   - 6.5 Basics of Modeling Capital Budgeting

7. Financial Modeling and Valuation
   - 7.1 Using Assumptions and Building a Financial Model
   - 7.2 Analysis, Valuation, and Planning

Literature

Compulsory Reading

Further Reading

- Bank for International Settlements. (2011). Basel III: A global regulatory framework for more resilient banks and banking systems . Retrieved June 21, 2016 from http://www.bis.org/publ/bcbs189.pdf
- Bodmer, E. (2014). Corporate and project finance modelling: Theory and practice . New York, NY: John Wiley & Sons.
- Chapman, C. S., Hopwood, A. G., & Shields, M. D. (2009). Handbook of management accounting research (3rd ed.). Amsterdam: Elsevier.
- Chew, D. H. (2001). The new corporate finance: Where theory meets practice (3rd ed.). Boston, MA: McGraw-Hill.
- Copeland, T. E., Weston, J. F., & Shastri, K. (2004). Financial theory and corporate policy (4th ed.). Reading, MA: Addison-Wesley.
- Cotter, D. (2012). Advanced financial reporting: A complete guide to IFRS . New York, NY: Financial Times Press.
- DePamphilis, D. (2015). Mergers, acquisitions, and other restructuring activities (8th ed., pp. 592–627). San Diego, CA: Academic Press.
- Gaughan, P. A. (2015). Mergers, acquisitions, and corporate restructurings (6th ed.). Hoboken, NJ: John Wiley & Sons.
- Groot, T., & Lukka, K. (2000). Cases in management accounting: Current practices in European companies . New York City, NY: Pearson Education.
- Jain, N.K. (2004). Working capital management . New Delhi, Dehli: A.P.H. Publishing Cooperation
- Koller, T., Goedhart, M., & Wessels, D. (2015). Valuation: Measuring and managing the value of companies (6th ed.). New York, NY: John Wiley and Sons.
- Sagner, J. (2014). Working capital management: Applications and case studies (pp. 1–32, 89–141). New York, NY: John Wiley & Sons.
- Shefrin, H. (2005). Behavioral corporate finance . Boston, MA: McGraw-Hill.
- Weston, F. J., Mitchell, M., & Mulherin, H. (2003). Takeovers, restructuring and corporate governance (4th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

IT Governance and Service Management

Module Code: DLMBITGSM

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	None	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. André Köhler (IT Service Management) / Prof. Dr. André Köhler (IT Governance and Compliance)

Contributing Courses to Module

- IT Service Management (DLMBITGSM01)
- IT Governance and Compliance (DLMBITGSM02)

Module Exam Type

Module Exam	Split Exam
	IT Service Management • Study Format "Fernstudium": Exam, 90 Minutes (0) IT Governance and Compliance • Study Format "Fernstudium": Exam, 90 Minutes

Weight of Module

see curriculum

Module Contents

IT Service Management

- IT infrastructure library (ITIL)
- ITIL service strategy
- ITIL service design
- ITIL service transition
- ITIL service operation

IT Governance and Compliance

- Establishing IT governance and compliance
- COBIT framework
- IT governance frameworks
- Data protection and data security

Learning Outcomes

IT Service Management

On successful completion, students will be able to

- understand IT service management as the enabler of information technology strategies and operations objectives.
- define the touchpoints between IT service management and management information systems.
- differentiate between lightweight and heavyweight approaches to IT service management.
- understand benchmarks and assessments to measure the capability of a service provider and its IT service management competences.
- apply IT services management tools and platforms proactively based on current information technology research and advisory.

IT Governance and Compliance

On successful completion, students will be able to

- explain IT governance and compliance both as tools to achieve organizational goals and to satisfy regulatory requirements.
- know the different IT governance frameworks given, in particular the industry standard model COBIT.
- set out the processes and policies for administering and managing IT systems for ensuring compliance with local and international regulatory requirements.
- understand that ensuring compliance with the IT governance framework can be a daunting task that requires constant collection, organization, monitoring, analysis and reporting on event logs to detect and manage control-related activity.
- recognize the IT governance and compliance monitoring tools for ensuring that controls for information systems are effectively implemented, monitored, and maintained.

Links to other Modules within the Study Program	Links to other Study Programs of IUBH
This module is similar to other modules in the field of Computer Science & Software Development.	All Master Programmes in the IT & Technology field.

IT Service Management

Course Code: DLMBITGSM01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

This course focuses on the nature and practice of IT services that keep IT systems running. It introduces students to the knowledge and experience needed to provide IT as a service to organizations, mainly based on the IT Infrastructure Library (ITIL) which is the industry standard for this purpose.

Course Outcomes

On successful completion, students will be able to

- understand IT service management as the enabler of information technology strategies and operations objectives.
- define the touchpoints between IT service management and management information systems.
- differentiate between lightweight and heavyweight approaches to IT service management.
- understand benchmarks and assessments to measure the capability of a service provider and its IT service management competences.
- apply IT services management tools and platforms proactively based on current information technology research and advisory.

Contents

1. Introduction to IT Service Management
   - 1.1 IT Services, Business IT Services
   - 1.2 Service Level Agreement (SLA)
   - 1.3 IT Service Management
   - 1.4 Reference Models for IT Service Management
2. IT Infrastructure Library (ITIL)
   - 2.1 Purpose and content of the IT Infrastructure Library
   - 2.2 Service Live Cycle in ITIL
   - 2.3 Overview on Service Strategy and Operational Processes
   - 2.4 Continual Service Improvement

3. ITIL – Service Strategy
   - 3.1 Business Relationship Management
   - 3.2 Service Portfolio Management
   - 3.3 Financial Management for Services
   - 3.4 Demand Management

4. ITIL – Operational Processes: Service Design
   - 4.1 Service Level Management
   - 4.2 Service Catalogue Management
   - 4.3 Availability Management
   - 4.4 Service Continuity Management

5. ITIL – Operational Processes: Service Transition
   - 5.1 Transition Planning and Support
   - 5.2 Change Management
   - 5.3 Service Asset and Configuration Management
   - 5.4 Release and Deployment Management

6. ITIL – Operational Processes: Service Operation
   - 6.1 Incident Management
   - 6.2 Problem Management
   - 6.3 Request Fulfilment
   - 6.4 Event Management

Literature

Compulsory Reading

Further Reading

- Orand, B. (2011). Foundations of IT service management with ITIL 2011: ITIL foundations course in a book. Create Space Independent Publishing Platform.
- Sturm, R. (2000). Foundations of service level management (1st ed.). Hoboken, NJ: Sams Publishing.
- van Bon, J. (2007). Foundations of ITIL V3. Reading: Van Haren Publishing.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online-Vorlesung

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

IT Governance and Compliance

Course Code: DLMBITGSM02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

IT governance and compliance are key elements within corporate governance, since most modern businesses rely heavily on IT infrastructure for their success. These elements detail the required leadership and organizational structures for maintaining and extending information technology in order to meet business strategies and objectives.

Course Outcomes

On successful completion, students will be able to

- explain IT governance and compliance both as tools to achieve organizational goals and to satisfy regulatory requirements.
- know the different IT governance frameworks given, in particular the industry standard model COBIT.
- set out the processes and policies for administering and managing IT systems for ensuring compliance with local and international regulatory requirements.
- understand that ensuring compliance with the IT governance framework can be a daunting task that requires constant collection, organization, monitoring, analysis and reporting on event logs to detect and manage control-related activity.
- recognize the IT governance and compliance monitoring tools for ensuring that controls for information systems are effectively implemented, monitored, and maintained.

Contents

1. About IT Governance
   - 1.1 Concept and Definitions
   - 1.2 The Value of IT in the Organization
   - 1.3 Current State and Perceptions
   - 1.4 Governance, Compliance and Risk Management in IT

2. Establishing IT Governance and Compliance
   - 2.1 Assessment
   - 2.2 IT Strategy
   - 2.3 Tactics
   - 2.4 Operations
   - 2.5 Compliance
   - 2.6 Performance

3. The COBIT Framework
   - 3.1 Overview of COBIT
   - 3.2 The COBIT Goals Cascade
   - 3.3 The COBIT Process Reference Model
   - 3.4 Deploying and Implementing COBIT

4. IT Governance Frameworks
   - 4.1 Quality Management as a Foundation
   - 4.2 ISO 9000 Family
   - 4.3 Maturity Models
   - 4.4 Relationship to Service and Architecture Frameworks (ITIL, TOGAF)
   - 4.5 Relationship to IT Security Frameworks (ISO 27000 family)

5. Data Protection and IT Security
   - 5.1 Data Protection
   - 5.2 IT Security Management
   - 5.3 IT Security Threats and Attack Scenarios
   - 5.4 Countermeasures
   - 5.5 Cryptography

Literature

Compulsory Reading

Further Reading

- Calder, A., Watkins, S., & Page, K. (2012). IT governance: An international guide to data security and ISO27001/ISO27002. Philadelphia, PA: Kogan Page Ltd.
- DeLuccia, J. (2008). IT compliance and controls: Best practices for implementation. Hoboken, NJ: John Wiley & Sons.
- ISACA (2012). Cobit 5 [Computer Software].
- Selig, G. (2008). Implementing IT governance: A practical guide to global best practices in IT management. Reading: Van Haren Publishing.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☑ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

DLMBITGSM02

Product Development and Design Thinking

Module Code: DLMBPDDT

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Leonardo Riccardi (Product Development) / Prof. Dr. Leonardo Riccardi (Design Thinking)

Contributing Courses to Module

- Product Development (DLMBPDDT01)
- Design Thinking (DLMBPDDT02)

Module Exam Type

Module Exam	Split Exam
	Product Development • Study Format "Fernstudium": Exam, 90 Minutes Design Thinking • Study Format "Fernstudium": Written Assessment: Project Report

Weight of Module

see curriculum

Module Contents

Product Development

- Production planning techniques
- Design tasks
- Product development approaches
- Digital product development and organizational aspects

Design Thinking

This course will put students in the mindset of Design Thinking. Students will be introduced to phases and distinct methods for inspiration, as well as the ideation and implementation of products. A current list of topics is located in the Learning Management System.

Learning Outcomes

Product Development

On successful completion, students will be able to

- know the basic definitions and principles of (new) product development.
- understand the key skills in product development.
- discuss, differentiate, and select appropriate product development approaches with respect to a given scenario.
- work with digital product development tools and techniques like CAD, PDM and PLM at a basic level.
- develop own solutions and approaches to academic and practical questions.
- discuss, evaluate, and adapt different digital product development techniques and tools.

Design Thinking

On successful completion, students will be able to

- comprehend, critically reflect on, and adopt the Design Thinking mindset.
- understand the inspiration, ideation, and implementation phases.
- evaluate and identify appropriate methods from the toolbox of human-centered design for given design tasks and challenges.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field of Design	All Master Programs in the Design, Architecture & Construction fields

Product Development

Course Code: DLMBPDDT01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

This course aims to provide basic work and problem-solving methods for the successful development of products. It introduces the definition of key design tasks and various alternative product development approaches such as flow-based, lean product development, and design thinking. Finally, the students will become familiar with the use of computer-aided design (CAD) tools and how they integrate into modern product development approaches.

Course Outcomes

On successful completion, students will be able to

- know the basic definitions and principles of (new) product development.
- understand the key skills in product development.
- discuss, differentiate, and select appropriate product development approaches with respect to a given scenario.
- work with digital product development tools and techniques like CAD, PDM and PLM at a basic level.
- develop own solutions and approaches to academic and practical questions.
- discuss, evaluate, and adapt different digital product development techniques and tools.

Contents

1. Introduction
   - 1.1 Basic Definitions
   - 1.2 The Product Development Process
   - 1.3 Indicators and Metrics
   - 1.4 Product Development Models
   - 1.5 Current Trends in Product Development

2. The Product Development Process
   - 2.1 Planning
   - 2.2 Concept Development
   - 2.3 Design
   - 2.4 Testing and Refinement
   - 2.5 Production and Ramp-up

3. Product Development Approaches
   - 3.1 Lean Product Development
   - 3.2 Design Thinking
   - 3.3 Human-Centered Design
   - 3.4 User Experience Strategy
   - 3.5 Open Innovation

4. Digital Tools
   - 4.1 Computer-Aided Design
   - 4.2 Computer-Aided Quality
   - 4.3 Product Data Management
   - 4.4 Product Lifecycle Management

5. Organizational Perspective
   - 5.1 Incremental, Platform, and Breakthrough Development
   - 5.2 Building Teams
   - 5.3 Political Issues in Organizations
   - 5.4 Distributed New Product Development

Literature

Compulsory Reading

Further Reading

- Kahn, K. B. (2004):The PDMA handbook of new product development. John Wiley & Sons, Inc., Hoboken, NJ.
- Levy, J. (2015): UX strategy: How to devise innovative digital products that people want. 1st edition, O'Reilly, Sebastopol, CA.
- Olsen, D. (2015): The Lean product playbook: How to innovate with minimum viable products and rapid customer feedback. Wiley, Hoboken, NJ.
- Reinertsen, D. G. (2009): The principles of product development flow: Second generation Lean product development. Celeritas, Redondo Beach, CA.
- Stark, J. (2011): Product lifecycle management: 21st century paradigm for product realisation. Springer, London.
- Ulrich, K. T. / Eppinger, S. D. (2015): Product design and development. 6th edition, Mc-Graw Hill, New York, NY.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Design Thinking

Course Code: DLMBPDDT02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMBPDDT01

Course Description

In this course, students will receive a hands-on introduction to human-centered design via the Design Thinking method. Beyond conveying the individual basic principles, the procedures in Design Thinking are examined in detail. In order to fully understand Design Thinking in terms of important aspects in practice, selected methods for the individual process steps are presented in theory and application. Students will learn to improve their design process by reflecting on and adapting their activities.

Course Outcomes

On successful completion, students will be able to

- comprehend, critically reflect on, and adopt the Design Thinking mindset.
- understand the inspiration, ideation, and implementation phases.
- evaluate and identify appropriate methods from the toolbox of human-centered design for given design tasks and challenges.

Contents

- This seminar covers current topics and trends in Design Thinking, illustrating some methods and techniques as well as case studies. Each participant must create a seminar paper on a chosen project, where he/she describes the application of the Design Thinking approach to a real product development scenario.

Literature

Compulsory Reading

Further Reading

- Brown, T. (2008): Design thinking. Harvard Business Review, 86(6), 84-95.
- Brown, T. (2009): Change by design: How design thinking transforms organizations and inspires innovation. Harper Business, New York, NY.
- IDEO.org. (2015): The field guide to human-centered design. IDEO.org.
- Kelley, T. / Kelley, D. (2013): Creative confidence: Unleashing the creative potential within us all. Crown Business, New York, NY.
- The Open Group. (2009): The Open Group Architecture Framework (TOGAF) (Version 9.0) [Software]. Available from https://www.opengroup.org/architecture/togaf9/downloads.html.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Project

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Project Report

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
120 h		30 h			150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☐ Course Book	☐ Creative Lab
☐ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☐ Audio	
☐ Exam Template	

DLMBPDDT02

Big Data

Module Code: DLMBBD

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	none	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Dr. Hamzeh Alavirad (Data Utilization) / Dr. Alavirad Hamzeh (Application Scenarios and Case Studies)

Contributing Courses to Module

- Data Utilization (DLMBBD01)
- Application Scenarios and Case Studies (DLMBBD02-01)

Module Exam Type

Module Exam	Split Exam
	Data Utilization • Study Format "Fernstudium": Exam, 90 Minutes Application Scenarios and Case Studies • Study Format "Fernstudium": Written Assessment: Case Study

Weight of Module

see curriculum

Module Contents

Data Utilization

- Pattern recognition
- Natural language processing
- Image recognition
- Detection and sensing
- Problem-solving
- Decision-making

Application Scenarios and Case Studies

- Agile development
- Workflow overview
- Fields of application
- Sprint Planning; Sprint
- Sprint Retrospective
- Committee presentation

Learning Outcomes

Data Utilization

On successful completion, students will be able to

- understand how identity, similarity, and diversity of data can be utilized in problem-solving approaches.
- differentiate between complicated and complex systems of investigation.
- identify the variability of a problem under investigation.
- distinguish between invariant and dynamic features of an investigated system.
- synthesize gained insights to propose a reliable data analytics solution.

Application Scenarios and Case Studies

On successful completion, students will be able to

- establish an application scenario for data science within a self-organized team.
- identify requirements and appropriate technologies for data collection.
- evaluate and select applicable technologies for data pre-processing and processing.
- assess challenges and risks of the selected approach.
- define clearly the outcome and value of the approach.
- elaborate a conceptual design document and presentation for decision-makers.

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
This module is similar to other modules in the field(s) of Data Science & Artificial Intelligence	All Master Programmes in the IT & Technology field(s)

Data Utilization

Course Code: DLMBBD01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The course Data Utilization introduces case-based applications that take advantage of regularities and patterns found within continuously generated texts, images, or sensor data. The cases solve issues of pattern recognition, natural language processing, image recognition, detection and sensing, problem-solving, and decision support. The cases are related to the application fields of cybersecurity, linguistics, augmented reality, intelligent transportation, problem-solving, and decision support.

Course Outcomes

On successful completion, students will be able to

- understand how identity, similarity, and diversity of data can be utilized in problem-solving approaches.
- differentiate between complicated and complex systems of investigation.
- identify the variability of a problem under investigation.
- distinguish between invariant and dynamic features of an investigated system.
- synthesize gained insights to propose a reliable data analytics solution.

Contents

1. Introduction
   - 1.1 The Meaning of Identity, Similarity, and Diversity
   - 1.2 Data Patterns and Ontologies
2. Pattern Recognition
   - 2.1 Analysis of User Interaction, Attitude, and Behavior
   - 2.2 Predictive Analytics
   - 2.3 Preventing the Unknown: User Behavior Analytics in Cybersecurity
3. Natural Language Processing
   - 3.1 Concepts of Natural Language
   - 3.2 Speech Recognition and Acoustic Modeling
   - 3.3 Discerning the Meaning: Linguistics and Social Media

4. Image Recognition
   - 4.1 Basics of Image Representation
   - 4.2 Integral Transforms and Compression
   - 4.3 Exploiting the Visual: Image Recognition for Augmented Reality

5. Detection and Sensing
   - 5.1 Sensor Construction and Techniques
   - 5.2 Intelligent Agents and Surveillance
   - 5.3 Managing the Complex: Sensor Networks in Intelligent Transportation Systems

6. Problem-solving
   - 6.1 Knowledge Sharing and the Cloud
   - 6.2 Rule-based Systems
   - 6.3 Learning from Nature: Expert Systems in Business

7. Decision Support
   - 7.1 Invariants, Determinants, and Alternatives in Decision-making
   - 7.2 Correlation and Causality in Strategic Decision-making
   - 7.3 Approaching the Crossroads: Dashboards and Visualization

8. Data Security and Data Protection
   - 8.1 Securing Data Storage and Processing Infrastructure Against Unauthorized Access
   - 8.2 Compliance and Regulations, GPDR

Literature

Compulsory Reading

Further Reading

- Strong, C. (2015). Humanizing big data: Marketing at the meeting of data, social science and consumer insight . London: Kogan Page.
- Wheeler, S. R. (2016). Architecting experience: A marketing science and digital analytics handbook . Singapore: World Scientific Publishing.
- Farzindar, A., Inkpen, D., & Hirst, G. (2017). Natural language processing for social media (2 nd ed.). San Rafael, CA: Morgan & Claypool Publishers.
- Bajcsy, P., Chalfoun, J., & Simon, M. (2017). Web microanalysis of big image data . Berlin: Springer.
- Hsu, H., Chang, C., & Hsu, C. (Eds.). (2017). Big data analytics for sensor-network collected intelligence . Cambridge, MA: Academic Press.
- Delen, D. (2015). Real-world data mining: Applied business analytics and decision making . New York, NY: Person.
- Pearl, J., & Mackenzie, D. (2018). The book of why: The new science of cause and effect . New York, NY: Basic Books.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online Lecture

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☐ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☑ Exam Template	

Application Scenarios and Case Studies

Course Code: DLMBBD02-01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMBBD01

Course Description

This course provides an opportunity for students to work on application scenarios for data science in selected industry sectors. This allows the students to combine the learning objectives from the other modules in a setting which closely resembles further work applications: Starting from the identification of suitable application areas, a specific use-case is selected and a set of metrics and/or KPIs is selected which can be used whether the case study is considered successful and leads to tangible benefit. A broad discussion on which data and type of data, as well as where to obtain, store, and process the data, allows students detailed insight into many practical issues that arise when dealing with data-driven projects, ranging from technical questions about infrastructure to data quality and relevant domain expertise.The actual work on the case study begins with the creation of a detailed project plan which defines objectives, means, and outcome. The plan is then implemented using an agile project management framework.The course closes with delivery of a design document and a final presentation in front of a committee of selected lecturers.

Course Outcomes

On successful completion, students will be able to

- establish an application scenario for data science within a self-organized team.
- identify requirements and appropriate technologies for data collection.
- evaluate and select applicable technologies for data pre-processing and processing.
- assess challenges and risks of the selected approach.
- define clearly the outcome and value of the approach.
- elaborate a conceptual design document and presentation for decision-makers.

Contents

1. Introduction to Agile Frameworks
   - 1.1 Scrum
   - 1.2 Kanban
   - 1.3 EduScrum
2. Fields of Application & Case Study Setup
   - 2.1 Overview of Fields of Application
   - 2.2 Definition of Success
   - 2.3 Selection of either of the fields (1 per team)

3. Data Sources
   - 3.1 Identifying Potential Internal and External Data Sources
   - 3.2 Identifying Potential Data Types and Data Processing Requirements
   - 3.3 Identifying Potential Data Quality Challenges

4. Case Study Work
   - 4.1 Creating a Project Plan
   - 4.2 Implementation of the Case Study Using the Agile Approach

5. Case Study Presentation
   - 5.1 Case Study Presentation: Approach and Key Findings
   - 5.2 Creation and Submission of Case Study Report

Literature

Compulsory Reading

Further Reading

- Drake, M. J. (2013).
  The applied business analytics casebook: Applications in supply chain management, operations management, and operations research
  . New York, NY: Pearson.
- Simon, P. (2013).
  Too big to ignore: The business case for big data
  . Hoboken, NJ: Wiley.
- Delhij, A., van Solingen, R., & Wijnands, W. (2015).
  The eduScrum guide
  [online]. Retrieved from: http://eduscrum.nl/file/CKFiles/The_eduScrum_Guide_EN_1.2(1).pdf
- Schwaber, K., & Sutherland, J. (2017).
  The Scrum guide
  . [Online]. Retrieved from https://www.scrumguides.org/docs/scrumguide/v2017/2017-Scrum-Guide-US.pdf

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Case Study

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Case Study

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
110 h		20 h	20 h		150 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☑ Course Book	☐ Creative Lab
☑ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☑ Audio	
☐ Exam Template	

Advanced Robotics 4.0

Module Code: DLMAIEAR

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	DLMAIEAR01	MA	10	300 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimaldauer: 1 Semester	WiSe/SoSe	English

Module Coordinator

Prof. Dr. Ulrich Kerzel (Industrial and Mobile Robots) / Prof. Dr. Ulrich Kerzel (Project: Collaborative Robotics)

Contributing Courses to Module

- Industrial and Mobile Robots (DLMAIEAR01)
- Project: Collaborative Robotics (DLMAIEAR02)

Module Exam Type

Module Exam	Split Exam
	Industrial and Mobile Robots • Study Format "Fernstudium": Exam, 90 Minutes Project: Collaborative Robotics • Study Format "Fernstudium": Written Assessment: Project Report

Weight of Module

see curriculum

Module Contents

Industrial and Mobile Robots

- Architectural components of mobile and industrial robots
- Mathematical description
- Design of interactions and control

Project: Collaborative Robotics

- Human-robot interaction
- Safety operation
- Human-friendly robot design

A current list of topics is located in the Learning Management System.

Learning Outcomes

Industrial and Mobile Robots

On successful completion, students will be able to

- identify the main challenges of robotics in the era of Industry 4.0.
- understand the working principles of industrial and mobile robots.
- model a robotic system and design a motion control algorithm.
- use software platforms to command the execution of tasks and retrieve the execution status.

Project: Collaborative Robotics

On successful completion, students will be able to

- classify interactions between robots and humans.
- identify safety and risk scenarios.
- understand the principles of human-friendly robot design.
- apply algorithms for safe interaction.

Links to other Modules within the Study Program	Links to other Study Programs of IUBH

Industrial and Mobile Robots

Course Code: DLMAIEAR01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	none

Course Description

The focus of this course is the theoretical foundation of mobile and industrial robotics. First, the basic concepts, architectural components (e.g., actuators and sensors), and challenges related to mobile and industrial robotics in the era of Industry 4.0 are presented. Next, the mathematical aspects concerning robot kinematics and trajectory planning are considered. These are necessary in order to define the operative task that a robot (mobile or industrial) must execute. The dynamics of a robotic system provides a mathematical model of the robot which can be exploited for simulation, design, and to control the task execution. There are various control architectures and approaches for robotic systems. This course focuses on the centralized and de-centralized architectures, as well as simple control design (e.g., proportional-integral-derivative control approaches).Finally, this course introduces the main software platforms and architectures used to control and exchange data with robots in a multi-agent environment, for instance, a manufacturing facility where many robots execute different tasks or must cooperate. The main patterns of such architectures and their uses are discussed. The adoption of model-based sensing/perception and control approaches yields intelligent systems which interact with the environment. This course concludes with an overview of behavior-based robotics, where robots are able to dynamically react to and learn from the real world.

Course Outcomes

On successful completion, students will be able to

- identify the main challenges of robotics in the era of Industry 4.0.
- understand the working principles of industrial and mobile robots.
- model a robotic system and design a motion control algorithm.
- use software platforms to command the execution of tasks and retrieve the execution status.

Contents

1. Introduction
    - 1.1 Robots and manufacturing
    - 1.2 Industrial robots
    - 1.3 Mobile robots
    - 1.4 Actuators for robotics
    - 1.5 Trends in robotics

2. Kinematics
   - 2.1 Position and orientation of a rigid body
   - 2.2 Joint kinematics
   - 2.3 Forward kinematics
   - 2.4 Inverse kinematics
   - 2.5 Differential kinematics
   - 2.6 Kinematics of mobile robots

3. Trajectory Planning
   - 3.1 Basic concepts
   - 3.2 Trajectories in the joints space
   - 3.3 Trajectories in the workspace
   - 3.4 Trajectory planning for mobile robots

4. Sensing and Perception
   - 4.1 Position
   - 4.2 Velocity
   - 4.3 Force
   - 4.4 Distance
   - 4.5 Visual

5. Fundamentals of Robot Dynamics
   - 5.1 Rigid body dynamics
   - 5.2 Lagrange formulation
   - 5.3 Newton formulation
   - 5.4 Direct and inverse dynamics
   - 5.5 Dynamics of mobile robots

6. Control of Robots
   - 6.1 Basic concepts
   - 6.2 Decentralized motion control
   - 6.3 Centralized motion control
   - 6.4 Force control

7. Architecture of Robotic Systems
   - 7.1 Architectural components
   - 7.2 Open Robot Control Software (OROCOS)
   - 7.3 Yet Another Robotic System Platform (YARP)
   - 7.4 Robot Operating System (ROS)
   - 7.5 Behavior-based robotics

Literature

Compulsory Reading

Further Reading

- Ben-Ari, M., & Mondada, F. (2018). Elements of robotics . Cham: Springer.
- Corke, P. (2017). Robotics, vision and control (2 nd ed.). Berlin, Heidelberg: Springer.
- Mihelj, M., Bajd, T., Ude, A., Lenarčič, J., Stanovnik, A., Munih, M., ... Šlajpah, S. (2019). Robotics (2nd ed.). Cham: Springer.
- Siciliano, B., & Khatib, O. (Eds.). (2016). Springer handbook of robotics (2nd ed.). Berlin, Heidelberg: Springer.
- Siegwart, R., Nourbakhsh, I. R., Scaramuzza, D., & Siegwart, R. (2011). Introduction to autonomous mobile robots (2nd ed.). Cambridge, MA: MIT Press.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Online-Vorlesung

Information about the examination	
Examination Admission Requirements	**BOLK:** yes **Course Evaluation:** no
Type of Exam	Exam, 90 Minutes

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
90 h		30 h	30 h		150 h

Instructional Methods
The learning materials include printed and online course books, vodcasts, online knowledge tests, podcasts, online tutorials, and case studies. This range of learning materials is offered to students so they can study at a time, place, and pace that best suits their circumstances and individual learning style.

Project: Collaborative Robotics

Course Code: DLMAIEAR02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		5	DLMAIEAR01

Course Description

A collaborative robot is a robot which is used in collaborative operation, where humans and robots share the same workspace. This course focuses on the basic concepts of collaborative robotics, such as classification of human-robot interaction, definition of safe interaction, soft robotics and human-friendly robot design, and algorithms to guarantee such a safe interaction. The students will receive a hands-on introduction to the topic, with the goal of being able to autonomously design, simulate and test collaborative robotic systems.

Course Outcomes

On successful completion, students will be able to

- classify interactions between robots and humans.
- identify safety and risk scenarios.
- understand the principles of human-friendly robot design.
- apply algorithms for safe interaction.

Contents

- Each participant must create a project report on a topic related to collaborative robotics, focusing on design and/or implementation aspects.

Literature
Compulsory Reading
Further Reading ▪ Ben-Ari, M., & Mondada, F. (2018). Elements of robotics. Cham: Springer. ▪ Corke, P. (2017). Robotics, vision and control (2nd ed.). Berlin, Heidelberg: Springer. ▪ Mihelj, M., Bajd, T., Ude, A., Lenarčič, J., Stanovnik, A., Munih, M., ... Šlajpah, S. (2019). Robotics (2nd ed.). Cham: Springer. ▪ Siciliano, B., & Khatib, O. (Eds.). (2016). Springer handbook of robotics (2nd ed.). Berlin, Heidelberg: Springer. ▪ Teixeira, J. V. S., Reis, A. M., Mendes, F. B., & Vergara, L. G. L. (2019). Collaborative Robots. In P. Arezes (Ed.), Occupational and environmental safety and health. Studies in systems, decision and control (pp. 791-796). Cham: Springer.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Project

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Project Report

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
120 h		30 h			150 h

Instructional Methods
The learning materials include guidelines, vodcasts, online tutorials, and forums. This range of learning materials is offered to students so they can study at a time, place, and pace that best suits their circumstances and individual learning style.

Master Thesis

Module Code: DLMMTHES

Module Type	Admission Requirements	Study Level	CP	Student Workload
see curriculum	See current study and exam regulations (SPO)	MA	15	450 h

Semester / Term	Duration	Regularly offered in	Language of Instruction
see curriculum	Minimum 1 semester	WiSe/SoSe	English

Module Coordinator

Degree Program Advisor (SGL) (Master Thesis) / Degree Program Advisor (SGL) (Colloquium)

Contributing Courses to Module

- Master Thesis (DLMMTHES01)
- Colloquium (DLMMTHES02)

Module Exam Type

Module Exam	Split Exam
	Master Thesis • Study Format "Fernstudium": Written Assessment: Master Thesis (90) Colloquium • Study Format "Fernstudium": Presentation: Colloquium (10)

Weight of Module

see curriculum

Module Contents

Master Thesis

- Written Master Thesis

Colloquium

- Thesis Defense

Learning Outcomes

Master Thesis

On successful completion, students will be able to

- work on a problem from their major field of study by applying the specialist and methodological skills they have acquired during their studies.
- analyse selected tasks with scientific methods, critically evaluate them and develop appropriate solutions under the guidance of an academic supervisor.
- record and analyse existing (research) literature appropriate to the topic of the Master's thesis.
- prepare a detailed written elaboration in compliance with scientific methods.

Colloquium

On successful completion, students will be able to

- present a problem from their field of study under consideration of academic presentation and communication techniques.
- reflect on the scientific and methodological approach chosen in the Master's thesis.
- actively answer subject-related questions from subject experts (experts of the Master's thesis).

Links to other Modules within the Study Program	**Links to other Study Programs of IUBH**
All modules in the master program	All Master Programmes

Master Thesis

Course Code: DLMMTHES01

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		13.5	See current study and exam regulations (SPO)

Course Description

The aim and purpose of the Master's thesis is to successfully apply the subject-specific and methodological competencies acquired during the course of study in the form of an academic dissertation with a thematic reference to the major field of study. The content of the Master's thesis can be a practical-empirical or theoretical-scientific problem. Students should prove that they can independently analyse a selected problem with scientific methods, critically evaluate it and work out proposed solutions under the subject-methodological guidance of an academic supervisor. The topic to be chosen by the student from the respective field of study should not only prove the acquired scientific competences, but should also deepen and round off the academic knowledge of the student in order to optimally align his professional abilities and skills with the needs of the future field of activity.

Course Outcomes

On successful completion, students will be able to

- work on a problem from their major field of study by applying the specialist and methodological skills they have acquired during their studies.
- analyse selected tasks with scientific methods, critically evaluate them and develop appropriate solutions under the guidance of an academic supervisor.
- record and analyse existing (research) literature appropriate to the topic of the Master's thesis.
- prepare a detailed written elaboration in compliance with scientific methods.

Contents

- Within the framework of the Master's thesis, the problem as well as the scientific research goal must be clearly emphasized. The work must reflect the current state of knowledge of the topic to be examined by means of an appropriate literature analysis. The student must prove his ability to use the acquired knowledge theoretically and/or empirically in the form of an independent and problem-solution-oriented application.

Literature
Compulsory Reading
Further Reading ▪ Hunziker, A. W. (2010): Fun at scientific work. This is how you write a good semester, bachelor or master thesis. 4th edition, SKV, Zurich. ▪ Wehrlin, U. (2010): Scientific work and writing. Guide to the preparation of Bachelor's theses, Master's theses and dissertations - from research to book publication. AVM, Munich. ▪ Selection of literature according to topic

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Thesis

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Written Assessment: Master Thesis

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
405 h					405 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☐ Course Book	☐ Creative Lab
☐ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☐ Audio	
☐ Exam Template	

Colloquium

Course Code: DLMMTHES02

Study Level	Language of Instruction	Contact Hours	CP	Admission Requirements
MA	English		1.5	See current study and exam regulations (SPO)

Course Description

The colloquium will take place after submission of the Master's thesis. This is done at the invitation of the experts. During the colloquium, the students must prove that they have fully independently produced the content and results of the written work. The content of the colloquium is a presentation of the most important work contents and research results by the student, and the answering of questions by the experts.

Course Outcomes

On successful completion, students will be able to

- present a problem from their field of study under consideration of academic presentation and communication techniques.
- reflect on the scientific and methodological approach chosen in the Master's thesis.
- actively answer subject-related questions from subject experts (experts of the Master's thesis).

Contents

- The colloquium includes a presentation of the most important results of the Master's thesis, followed by the student answering the reviewers' technical questions.

Literature

Compulsory Reading

Further Reading

- Renz, K.-C. (2016): The 1 x 1 of the presentation. For school, study and work. 2nd edition, Springer Gabler, Wiesbaden.

Study Format Fernstudium

Study Format	Course Type
Fernstudium	Thesis Defense

Information about the examination	
Examination Admission Requirements	**BOLK:** no **Course Evaluation:** no
Type of Exam	Presentation: Colloquium

Student Workload					
Self Study	**Presence**	**Tutorial**	**Self Test**	**Practical Experience**	**Hours Total**
45 h					45 h

Instructional Methods	
☐ Learning Sprints®	☐ Review Book
☐ Course Book	☐ Creative Lab
☐ Vodcast	☑ Guideline
☐ Shortcast	☐ Live Tutorium/Course Feed
☐ Audio	
☐ Exam Template	