CLASSIC vhb
ONLINE COURSES
ENGLISH

Academic Year
2020/2021

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Subject Group

Advanced C++ Programming

Prof. Dr. Harald Köstler, Prof. Dr. Ulrich Rüde
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

This course shows and explains newer features of C++. In the last ten years, there have been several new language standards. Starting with C++11, there have been major changes to the language and there is now a three-year time span until a new standard is released. After C++11 there are C++14, C++17, C++20, and the next will be C++23. The purpose of this course is to familiarize you with the terminology of the C++ standard and to learn the major new features and how to use them in your own code. Of course, it is not really useful to base a C++ programming course directly on the C++ standard, because it is not suitable for learning C++. It is mainly written for compiler constructors and is more of a technical document. Nevertheless, technical terms from the C++ standard are used and thus a theoretical approach to teaching C++ is also pursued. In the following, the basic terms of the programming language C++ should be defined correctly. Various newer language constructs (C++11 standard and later) will be reproduced and tasks will be solved with the help of newer language constructs. New language constructs based on the C++ language standard and code testing should be understood and evaluated independently.

Course structure
1. Introduction
2. Type deduction and initialization syntax
3. Move Semantics
4. Lambda
5. Extended OO
6. Smart pointer
7. Extended Library
8. Templates
9. C++20 Standard

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

Introduction to Automata, Languages, and Computation

Prof. Dr. Wolfgang Mauerer

Ostbayerische Technische Hochschule Regensburg

Abstract

The course "Introduction to Automata, Languages, and Computation" provides the participants with fundamental knowledge in the fields of the theory of computation, i.e., automata theory, formal languages, computability, and complexity theory. Teaching the theory of computation provides the basics for every branch of modern computer science. The insights are part of almost every curriculum in the field. Moreover, theoretical computer science encourages logical reasoning and reveals common structures pertaining to computer science in general as well as to the studies of Management Information Systems. This course imparts the knowledge, abilities, and skills university students need to solve complex problems by applying well-established concepts of information and communication technology.

Course structure

1. Introduction and Finite Automata
2. Regular Expressions and Formal Languages
3. Context-free Grammars and Formal Languages
4. Pushdown Automata (PDA)
5. Turing Machines and Computability
6. Complexity Classes

Hours per week / Credits

4 SWS / 6 ECTS

Exam

Written examination

Programming in C++

Prof. Dr.-Ing. Herbert Fischer
Technische Hochschule Deggendorf

Abstract
This course teaches the fundamentals of the programming language C/C++ in two parts. Part one is suitable for beginners and participants with basic C/C++ knowledge. Part two deals above all with dynamic objects and C++ special concepts and turns to advanced users. The two parts of the course can be worked on independently of each other or even in one semester.

Course structure
Part I: C++ for Beginners (Static Concepts)
1.1 Introduction to Programming
1.2 Variables, Data Types, Operators, Input/Output
1.3 Functions
1.4 Control Structures
1.5 Arrays/Sample Application Procedural Programming
1.6 Paradigms of Object Orientation (OO)
1.7 Classes and Objects
1.8 Constructor, Member Initialization List, Overloading, Destructor, Static Member Variables
1.9 Inheritance/Sample Application Object-Oriented Programming

Part II: Advanced C ++ (Dynamic Concepts)
2.1 File Processing & Exception Handling
2.2 Pointers
2.3 Dynamic Objects
2.4 Linked Lists/Sample Application File Processing & Error Handling with Linked Lists
2.5 Polymorphism, Virtual Functions, Abstract Classes
2.6 Operator Overloading
2.7 Templates

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Written examination

Tele-Experiments with Mobile Robots

Prof. Dr. Klaus Schilling
Julius-Maximilians-Universität Würzburg

Abstract
"Tele-experiments with mobile robots" brings basic robot theory and its implementation together into an introductory course for all students. Given that this tele-course is used as part of regular on-site lectures, the course contents are kept up-to-date and always accessible. The experiments available here include a carefully selected mixture of real-world examples and simulations of robotic principles. Various topics in field robotics including kinematics, navigation principles, path planning, theoretical analysis and inverse kinematics, and sensor data acquisition and processing are discussed and students are presented with challenging quizzes before beginning the experiments. Students also spend time reflecting on acquired sensor values and their interpretation. Time delay concepts in robot tele-operation on variable bandwidth networks are also transparently presented to users as part of involuntary learning.

Course structure
1. Kinematics of a Car-like Mobile Robot
2. Navigation Control of a Car-like Mobile Robot
3. Path Planning of a Car-like Mobile Robot
4. Modelling of the Forward and Inverse Kinematics of a Differential Drive Robot
5. Sensor Data Acquisition and Processing

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Seminar paper

Blockchain Applications for Business

Foundations of Blockchain Applications in Business Contexts

Prof. Dr. Björn Ivens
Otto-Friedrich-Universität Bamberg

Abstract

In order to account for the increasing importance of blockchain technology in business practice and in order to get students ready for this new wave of innovation, we created this course, entitled "Blockchain Applications for Business".

In a nutshell, by taking this course, students can acquire a holistic understanding of basic blockchain fundamentals and gain comprehensive insights into the potential of blockchain technology in a multitude of business use cases. That said, this course will help students understand current developments in blockchain from many diverse perspectives and lay a solid foundation to further explore the blockchain topic.

Course structure

1.   Foundations of Blockchain Technology and Applications

1.1   Introduction to Blockchain Technology

1.2   Tech Basics of Blockchain Technology

1.3   Exploring the Bitcoin Whitepaper

1.4   Hands-on Tutorial: Smart Contracts on Ethereum

2.   The Value Proposition of Blockchain Technology

2.1   Strengths and Weaknesses of Blockchain Technology

2.2   Identifying Business Opportunities in the Blockchain Space

3.   Blockchain Use Cases in Different Business Areas

3.1   Use Cases of Blockchain: Introduction & Marketing

3.2   Use Cases of Blockchain: Finance Industry

3.3   Use Cases of Blockchain: Automotive Industry

3.4   Use Cases of Blockchain: Supply Chains & IoT

3.5   Use Cases of Blockchain: Vocational Education Training

4.   A Differentiated Perspective on Blockchain: Legal, Societal, and Ecological Aspects of Blockchain

Hours per week / Credits

3 SWS / 6 ECTS

Exam

Written examination

Electronic Human Resources Management

Prof. Dr. Sven Laumer
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
The course deals with the management of one of the most important resources in a company: its employees. In addition to teaching the basics of Human Resources Management (HRM), the course focuses on the use and development of digital technologies and considers how digital work systems are changing HRM. The fundamentals of strategic and electronic human resources are discussed, the use of social media in HR is considered, data-driven approaches and their use in HR are addressed, and the challenges and opportunities of electronic human resources management (E-HRM) are discussed.

Course structure
1. Fundamentals of strategic and electronic HRM
   - The Digital HR Organization
   - Human Resources Information Systems
   - Workflow Management and HRM
2. Social Media
   - Enterprise Social Media and Network Analysis for HRM
   - Social Media, Employer Branding, and Gamification
3. Data-driven approaches and their use in HRM
   - People Analytics – Big Data, AI, and HRM
   - Recommender Systems
   - Chatbots in HRM
4. Challenges and opportunities of E-HRM
   - E-Performance, E-Learning, and employer development
   - Technology Acceptance

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Written examination

ERP Systems and Digital Transformation

Development of Digital Business Process Capabilities

Prof. Dr. Alexander Dobhan

Hochschule für angewandte Wissenschaften Würzburg-Schweinfurt

Abstract

The digital transformation is changing work processes and forms of organization (see VDI 2013), which means that companies need to change their competence profiles (Gerholz 2018). Studies indicate that the ability to solve problems in the environment of operational processes and the central application systems (ERP systems), the understanding of new technologies (including the use of IoT, cloud computing, and AI), and monitoring activities (e.g., analysis of the operational databases resulting from the processes; data analytics) are important (IW 2016).

This course addresses these needs and introduces the central, operational application systems (ERP systems). After a theoretical introduction to the topic "ERP Systems" and "Business Processes", the learning environment offers participants the opportunity to deepen their knowledge of two ERP systems (Infor VISUAL ERP and Microsoft Dynamics NAV) and to consolidate the theoretical foundations through practical experience. In the subsequent case studies "IoT", "Mobile ERP", and "Data Extraction", participants are given the opportunity to delve into current key topics in the field of business digitization processes. As an integrating data hub, ERP systems are the central starting point for implementing these digital trends.

Course structure
- Introduction to the field of ERP systems - LEA's DREAM: From industrialization to digitalization
- ERP basic knowledge – THEORY
- ERP application - INFOR VISUAL ERP
- ERP application - MICROSOFT DYNAMICS NAV
- Case study: IOT
- Case study: MOBILE ERP
- Case Study: DATA EXTRACTION

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Practical elaboration in the system (50 %) and case study elaboration (50 %)

Global Retail Logistics

Prof. Dr.-Ing. Evi Hartmann
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
This course offers specific insights on the logistic processes in the global retail industry. Upon completion of the course, the students should understand the peculiarities of logistics for fast moving consumer goods. The course consists of ten lectures, which are enriched by case studies, additional readings as well as exercises and tests.

Course structure
1. Overview
2. Characteristics & basics
3. Trends & challenges
4. Point of sale & E-Commerce
5. Interfaces
6. Load units & transport logistics
7. Cross docking
8. Warehousing & distribution
9. Food supply chain
10. Sustainability

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Written examination

International Marketing

Prof. Dr. Dirk Holtbrügge
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
The participants acquire detailed expertise in the field of international marketing. Effective international marketing is increasingly important for companies due to rising international connectivity between countries and companies, and companies' need to grow by selling their products and services globally. They can understand, explain, reflect, and apply the theories, concepts, and terminology of the field and are familiar with empirical studies in the field of international marketing. The participants understand the challenges of international marketing and can independently develop solutions for problems to questions of standardization and differentiation in an international context, of international market entry, and of the design of the marketing mix in an international context. They also understand these aspects with regard to different industries (B2B, B2C) and different countries Special attention is paid to the transfer of theoretical contents to practical examples. Therefore, different country and company case studies are included in the form of video interviews. The participants are provided with interesting insights into the international marketing activities of several international companies headquartered in the Nürnberg Metropolitan Area.

Course structure
I.   Foundations
  1.   Challenges and Opportunities of International Marketing
II.   Methods
  2.   International Market Research
III. Strategies
  3.   International Market Entry Strategies
  4.   Standardization vs. Differentiation of International Marketing
IV.   Policies: International Marketing Mix
  5.   International Product Policy
  6.   International Price Policy
  7.   International Placement Policy
  8.   International Promotion Policy

Hours per week / Credits
2 SWS / 5-6 ECTS

Exam
Seminar paper

International Supply Chain Management

Prof. Dr.-Ing. Jörg Franke
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
Supply chain management "[…] encompasses the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities. Importantly, it also includes coordination and collaboration with channel partners [...]. In essence, Supply Chain Management integrates supply and demand management within and across companies."

Course structure
1. Integrated Logistics, Procurement, Materials Management, and Production
2. Material Inventory and Material Requirements in the Enterprise
3. Strategic Procurement
4. Management of Procurement and Purchasing
5. In-Plant Material Flow and Production Systems
6. Distribution Logistics, Global Tracking and Tracing
7. Modes of Transport in International Logistics
8. Disposal Logistics
9. Logistics Controlling
10. Network Design in Supply Chains
11. Global Logistic Structures and Supply Chains
12. IT Systems in Supply Chain Management
13. Sustainable Supply Chain Management

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Leadership and Communication in Global Business
Introduction to International People Management

Prof. Dr. Katrin Winkler
Hochschule für angewandte Wissenschaften Kempten

Abstract

Business today is volatile, uncertain, complex and ambiguous meaning leaders must face new challenges daily. To steer a business and its people through such an environment, strong and effective leadership is essential. This requires leaders to have a solid knowledge base and understanding of their role, responsibility and how to succeed.

This course introduces leadership theory and practice and explores the proven model of Transformational Leadership. It also dives deeper to examine Transformational Leadership in the digital age and key aspects of communication to inspire, guide, and create trustful relationships.

Course structure
0.   Introductory Chapter: Digital Literacy
1.   Why Leadership Today More than Ever
2.   Exploring Leadership Theories and What Can Be Learnt
3.   How to Become a Transformational Leader
3.1 Building a Business Persona (Idealised Influence)
3.2 Bringing People on the Journey (Inspirational Motivation)
3.3 Treating People as Individuals (Individualised Consideration)
3.4 Empowering People to Think (Intellectual Stimulation)
3.5 Including Everyone and Everything (Integrative Support)
4.   Communication: The Leadership Booster

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Seminar group task (20 %) and individual case study elaboration (80 %)

Performance Management in Teams

Enhancing Motivation and Productivity with the Productivity Measurement and Enhancement System (ProMES)

Prof. Dr. Klaus Moser

Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

Performance management is a comprehensive systematic approach aimed at aligning the performance of groups and individuals with organizational goals and strategy and at achieving continuous improvement. Strategically derived performance indicators and motivational interventions such as goal setting, feedback, and participation are core elements of performance management. This course covers several topics that are relevant for the design of effective performance management systems.

Course structure

1. Motivational Theories
2. Performance Evaluation
3. Productivity Measurement and Enhancement System (ProMES)
4. Case Study
5. Developing a Team Vision
6. Developing Objectives
7. Developing Indicators
8. Developing Contingencies
9. Developing a Feedback Report

Hours per week / Credits

2 SWS / 5 ECTS

Exam

Written examination

Principles of Marketing & Sales

Prof. Dr. Sandra Gronover
Hochschule für angewandte Wissenschaften Landshut

Abstract

This course introduces the fundamentals of Marketing and Sales Management. It is offered in two variants. Learning path one (2.5 ECTS) offers the opportunity to gain basic knowledge in this field of management. This includes, besides a basal understanding of marketing and sales terms, deeper insights in product policy, price policy, promotion policy, and sales management.

For the more intense lecture path two (5 ECTS) additional contents have to be worked through:
- Strategic Marketing
- Market Research
- Consumer Behaviour

Course structure

1. Introduction   (for ECTS 5 and ECTS 2.5 path)
2. Strategic Marketing   (for ECTS 5 path only)
3. Market Research   (for ECTS 5 path only)
4. Consumer Behaviour   (for ECTS 5 path only)
5. Product   (for ECTS 5 and ECTS 2.5 path)
6. Price   (for ECTS 5 and ECTS 2.5 path)
7. Promotion   (for ECTS 5 and ECTS 2.5 path)
8. Sales   (for ECTS 5 and ECTS 2.5 path)

Hours per week / Credits
- Path one: 1.5 SWS / 2.5 ECTS
- Path two: 4 SWS / 5 ECTS

Exam
Written examination

Product Innovation Management in Emerging Markets

Prof. Dr. Markus Beckmann (kommissarisch)
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
This course is intended for future managers and entrepreneurs who want to understand the trends in the management of product innovation in an emerging markets context. The course includes a combination of online lectures, videos, keynotes, and case studies in which participants study the management of product innovation in emerging economies. Course contents include:

- An introduction to product innovation management in emerging markets
- Basic definitions and concepts of emerging markets as well as innovation
- Classification and case studies of innovations originating from emerging markets: e.g., frugal innovation, jugaad innovation, reverse innovation
- A discourse about the transformation of research and development and innovation strategies
- Current trends and outlook on the product innovation management in emerging markets

Course structure
1. General Information
2. Introduction
3. How we Define Emerging Markets
4. How we Define Innovation
5. Constraint-Based Innovation
6. Reverse Innovation
7. Transformation of Strategies
8. Future Outlook
9. Group Assignment

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Oral examination (group presentation) and hand in written assignment

Profiting from Ideas and Inventions: An Introduction to Intellectual Property Rights

Prof. Dr. Markus Beckmann (kommissarisch)
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

This course targets students who want to learn how to employ their ideas, inventions, and creativity successfully in the long run, independent of the (business) context. To profit from these, intellectual assets are critical. Thereby, intellectual property (IP) such as know-how, inventions, brands, patents, and trade secrets is oftentimes the largest proportion of a firm's total wealth. Not only in technology and innovation management, IP rights can guide individuals and firms alike over the life-cycle of an offering and beyond. And yet, most firms do not proactively manage these assets.

Moreover, knowing, understanding, and applying intellectual property is not limited to firms but crucial for each individual. Entrepreneurs, artists, and other creative people can benefit immensely from dealing with this topic, especially in navigating challenges from digitalization.

Focusing on the fundamental basics, this introductory course gives an overview of the different types of IP after portraying their historic background. Theory and central key concepts will alternate with case examples from practice. Examples span a variety of fields and types. Besides insights into application of IP rights within the business context, thematic excursions will dive into areas of entrepreneurship, emerging markets, and the digital economy and their specific application of IP.

Course structure
1. General Information
2. IP Basics
3. History and Origins
4. Copyrights and Designs
5. Patents & Co.
6. Trademarks
7. Case Study
8. IPR and the Business Life
9. New Trends in IPR
10. Group Assignment

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Oral examination (group presentation) and hand in written assignment

Public Economics

Prof. Dr. Hanjo Allinger
Technische Hochschule Deggendorf

Abstract
Public economics focuses on the state's role in attempts to regulate the economy. Some market failures are well known and require state action. Markets can either fail because the market outcome is inefficient or because it is unjust. But how exactly should the state respond to undesired market outcomes? Several general market failures like externalities or public goods will be defined. Students learn about the appropriate state reaction to these market failures to maximize welfare in society. The course offers an introduction to taxation theory and shows which market side has to bear the burden of a tax. Students will learn how to distinguish good taxes from bad taxes. Last but not least, students will be introduced to two completely different approaches to handle justice in a scientific context: exogenous and endogenous justice. In these two fields, they learn to work with different concepts of justice and how to apply them to real world analysis.

Course structure
1. Introduction
2. Market Failure: Public Goods
3. Market Failure: Externalities
4. Market Failure: Monopolies and Merit Goods
5. Introduction to Optimal Taxation Theory
6. Redistribution and Justice

Hours per week / Credits
2 SWS / 2.5 ECTS

Exam
Written examination

Sponsorship-linked Marketing

Prof. Dr. Jörg Königstorfer
Technische Universität München

Abstract
Students will learn about the state of the art of sponsorship-linked marketing, including sponsorship activities in sports, arts and culture, social causes, science and education, as well as ecological causes. Sponsorship-linked marketing is the orchestration and implementation of marketing activities in order to build and communicate an association to a sponsored property. Sponsored properties can be sports teams, festivals, charities, and schools, to state some examples. The course includes both online lectures and case examples that are part of the units.

At the end of the module, students understand how sponsorship portfolios are created from the perspective of different stakeholders (sponsors and ambushers, event organizers, individuals, media). The students understand the basics in sponsorship and sponsorship-linked marketing, including recent developments and the chain of effects of the sponsorship-linked marketing management process.

Course structure
1. Introduction and Overview of the Sponsorship-linked Marketing Management Process
2. How Sponsorship-linked Marketing Activities Influence Stakeholders
3. Outcome Measurement and Controlling in Sponsorship-linked Marketing
4. Sponsorship-linked Marketing Implementation

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Written examination

Strategic Human Resources Management

Prof. Dr. Max Ringlstetter
Katholische Universität Eichstätt-Ingolstadt

Abstract
In this course, the basic understanding of human resource management (HRM) will be taken to a deeper level. After a short introduction, we present the core functions of HRM. Then, a more sophisticated view on HR from a strategic perspective will be taught. We highlight interdependencies between HR and corporate strategy and, lastly, emphasize the effect of the external environment on HR and show trends in strategic HRM.

Learning objectives
After you engaged successfully in the course, you will be able to …

- … critically reflect on functions of and trends in HRM,
- … analyse interdependencies of strategic corporate governance and HRM as well as evaluate effects of different measures from both perspectives,
- … recognize the importance of an HR department given its implementation into the organization,
- … not only analyse tasks of HRM and contextual challenges, but also to develop and critically reflect on context-specific measures, and
- … reduce complex information to its essential core and to develop and summarize recommendations for the management in the form of an executive summary.

Course structure
1. Introduction
2. Functions of HRM
3. Strategy Orientation in HRM
4. Professional Strategic HRM
5. Framework and Trends in Strategic HRM

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Seminar paper

Computer Networking and Secure Network Management Interactive Online (CNSM)

Prof. Dr.-Ing. Alexandru Soceanu
Hochschule für angewandte Wissenschaften München

Abstract

Part I (Fundamentals of Computer Networking): The standard ISO/OSI computer networking model is introduced and compared with the TCP/IP model. The most important protocols and services of each layer used for networking the local and remote computers are presented. All protocols are analysed hands on using remote virtual labs and analyser tools. The roles and the main features of the network components are addressed, as well.

Part II (Secure Computer Network Management): The role and the objectives of network management (NM) for an organization are initially addressed. Various standard and private Management Information Bases (MIB) and remote MIBs are presented. The different types of NM tools and protocols are experienced hands on based on virtualized experimental virtual networks and software tools. Experiments are also conducted on the fundamentals of the Reconnaissance and DoS network attack types. An understanding is gained of the need for protection tools. Legacy protection tools and other techniques for protecting the network components are addressed.

Course structure
Part I: Fundamentals of Computer Networking
1.   Computer Networking Terminology & Architecture
2.   Application Layer, Transport Layer, and Network Layer
3.   Multiprotocol Label Switching (MPLS)
4.   Data Link Layer Wired Networks and Wireless Networks
5.   Multimedia Technology

Part II: Secure Computer Network Management
1.   Surveys of Fundamentals on Computer Networks
2.   Network Management (NM) Architecture
3.   Management Information Bases (MIBs)
4.   NM Protocols
5.   Managing Network Security & Network Protection

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Industry 4.0 in Planning and Production

Prof. Dr. Valentin Plenk
Hochschule für angewandte Wissenschaften Hof

Abstract

One of the important goals in the area of Industry 4.0 is the flexibilization of production processes up to batch size 1. Ideally, a user can freely formulate her or his product requirements and the networked production system can produce a new product largely independently based on these requirements and the capabilities and availability of equipment. The flexibility required for this places great demands on planning systems such as Management Execution Systems (MES) and Enterprise Resource Planning Systems (ERP). These requirements can only be met on the basis of a solid data base that is supplied by the managed resources, i.e., the production machines in real time.

This lecture will demonstrate the problems that arise and common solutions with the following focal points:

- vertical integration between planning systems and production equipment
- horizontal integration in the Internet of Things

Course structure

1. Basics and Terms of Industry 4.0
2. Structure and Function of Cyber-Physical Production Systems
3. Flexible Planning in ERP/PPS/MES Systems
4. Industry 4.0 Requirements for ERP, MES, and Production
5. Demonstration of Problems and Common Solutions for Test Environments and Application Scenarios of Industry 4.0.
6. Practical Application and Consolidation in Virtualized Exercises

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Integrated Production Systems

Prof. Dr.-Ing. Jörg Franke
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
Participants of the lecture "Integrated Production Systems" get an overview of the tasks of a production manager in an international company. The lecture explains, based on the overall goals of an integrated production system, the basic methods and tools of a lean culture. The contents are presented in learning videos and slides. Additionally, students have to work on practical case studies.

Course structure
1. Production Systems in the Course of Time
2. Structure of Integrated Production Systems
3. Continuous Improvement Process
4. Process Orientation in Production Systems
5. Lean Global Production
6. Total Quality Management
7. Low Cost Automation
8. Total Productive Maintenance
9. Material and Energy Efficiency
10. Information Efficiency
11. Lean Development
12. Lean Administration
13. Repetition of Contents and Exam Preparation

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Machine Learning for Engineers I
Introduction to Methods and Tools

Prof. Dr. Björn Eskofier
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
This course offers an overview of some of the most widely used machine learning (ML) methods that are required for solving data science problems. We present the necessary fundamental for each topic and provide programming exercises. The course includes:

- The common practices for data pre-processing
- Teaching different tasks regarding regression, classification, and dimensionality reduction using methods including but not limited to linear regression and classification, support vector machines and deep neural networks
- Introduction to Python programming for data science
- Applying machine learning models on real world engineering applications

Course structure
1. Introduction to Machine Learning for Engineer's Applications
2. Linear Models: Linear Regression and Logistic Regression
3. Principal Component Analysis (PCA)
4. Support Vector Machines
5. Deep Learning: Convolutional Neural Networks

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Medical Image Processing for Diagnostic Applications

Prof. Dr.-Ing. Andreas Maier
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
In this course you will learn about the different modalities in medical image processing, learn the necessity of image preprocessing specific to the acquisition type, you will engage yourself in fundamentals and algorithmic details of the 3D-reconstruction, and get to know several options for image registration in all their mathematical beauty.

Course structure
1. Course Introduction
2. Mathematical Tools: Singular Value Decomposition
3. Mathematical Tools (optional): Fourier Transform
4. Preprocessing: Undistortion
5. Preprocessing: Defect Pixel Interpolation
6. Preprocessing: MR Inhomogeneities
7. Image Reconstruction: Basics
8. Image Reconstruction (Optional): Projection Models
9. Image Reconstruction: Parallel Beam
10. Image Reconstruction: Fan Beam
11. Image Reconstruction: 3-D Reconstruction
12. Image Reconstruction: Modalities
13. Image Reconstruction: Iterative Reconstruction
14. Rigid Registration: Rigid Transformations
15. Rigid Registration: ICP Algorithm

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Medical Image Processing for Interventional Applications

Prof. Dr.-Ing. Andreas Maier
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
In this course you will learn about different techniques to enhance medical images for clinical use or as a preprocessing step. From there, methods for image analysis are introduced and described in detail. Both an optimal use of the data and the analysis of the image's content are important objectives for virtually any interventional imaging application. The methods shown include super-resolution, epipolar consistency, deep learning and several advanced reconstruction methods.

Course structure
1.   Chapter 1: Course Introduction
2.   Chapter 2
2.1 Features
2.2 Image Enhancement
2.3 Super-Resolution
2.4 Deep Learning
3.   Chapter 3
3.1 Projection Models
3.2 Epipolar Geometry
3.3 Factorization
3.4 Segmentation
4.   Chapter 4
4.1 Variational Calculus
4.2 Reconstruction

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Application of Medical Technology

Prof. Dr. Thomas Spittler
Technische Hochschule Deggendorf

Abstract

Medical technologies are products, services or solutions designed to maintain and improve the health of patients at every stage of diagnosis, treatment, monitoring and prevention. Innovations in medical technology are one of the driving forces of economic growth, regardless of whether the new technologies are pharmaceuticals, medical devices, biotechnology or information technology. Advances in medical technology have led to a significant improvement in the quality of life.

This course aims to provide knowledge and insights into the goals of using medical technologies with a focus on medical devices. The course deals with various diagnostic, treatment and monitoring tools in different hospital wards such as cardiology, pneumology and gastroenterology. The course is designed to convey the theoretical principles and special features of digital image processing and digital signal processing (DSP). It also provides an understanding of the importance of implementing sustainable medical devices and their impact on the environment, as well as an understanding of the consequences of ignoring the usability of medical devices and their impact on users.

Course structure
1. Basics of Images and Signal Processing
2. Functional Diagnostics and Imaging Techniques
3. Usability Engineering
4. Sustainability of Medical Devices
Case Study: Challenges and Benefits for Mobile Medical Technology

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

Clinical Economics

Prof. Dr. Horst Kunhardt
Technische Hochschule Deggendorf

Abstract
The course "Clinical Economics" is designed to three target groups that make health care decisions and have to know both the costs and the patient and societal values of health services. These groups are health care providers (doctors, nurses, nursing scientists, "Y"-nurses, physiotherapists), health care managers and economists (health managers, patient managers, hospital managers, disease managers, health insurance specialists, health scientists, risk managers in health care) and health informatics experts (health informatics experts, health prevention specialists, information managers in health care).

Course structure
Definition and need of CLINECS
- Why the Human Mind is not Sensible Enough to Scientific Evidence
- Taking Internal Beliefs into Consideration in Critical Appraisal of External Evidences
- The Basis for the Null Hypothesis Principle in Medical Thinking
- Extreme Plausibility Principle and its Variants
- Proof of Concept Principle
- The Very First Step in Critical Appraisal: Is the Hypothesis Worth to Be Tested?
- Why Most Published Studies are False
- The Prevalent Phenomenon of Publication Bias
- Identifying Results too Good to be True ("Smelling" Studies)
- Defining the Right Outcomes in Clinical Trials
- Good and Bad Primary Outcome Definition on Trials
- Self-Fulfilling Prophecies as Primary Outcomes of Trials
- The Weakness of Randomization: It Cannot Control for Preferences
- Common Traps in Composite End-Points
- The Counterintuitive (but Adequate) Intent to Treat Analysis

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Seminar paper

Cross-border Health Care Management

Prof. Dr. Horst Kunhardt
Technische Hochschule Deggendorf

Abstract
The lecture "Cross-border Health Care Management" offers students from various disciplines insights into the structure and framework of the global health care industry in a modern, internationally networked health care system.

Course structure
1. Supply and Demand in Medical Tourism and Cross-border Health Care
2. Countries of Origin and Destination in Medical Tourism
3. Legal Issues of Cross-border Health Care Management
4. Marketing in Medical Tourism
5. Transcultural Features of International Patients
6. Processes in Medical Tourism
7. Ethics and Morals
8. Case Studies

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Seminar paper

In the Spotlight: A Survey of US-American Literary History

Prof. Dr. Christine Gerhardt, Dr. Nicole K. Konopka, Prof. Dr. Heike Paul
Otto-Friedrich-Universität Bamberg

Abstract

This seminar is an internet-based survey course that offers students an overview of the main developments in US-American literary history. The class will help students to understand the links between literary periods, their central ideas, and important stylistic features. The course provides participants with detailed information about the complexities that underlie and connect each literary work and period. The course's other main goal is to familiarize students with key texts and key discourses of US-American literature, such as race, class, and gender.

Course Structure
1. Introduction and Basics of Text Analysis
2. Colonial Era and Puritan Literature
3. Literature of the Enlightenment
4. Interim Review 1
5. Romanticism 1 (Transcendentalism and Dark Romanticism)
6. Romanticism 2 (Sentimentalism and Romantic Poetry)
7. Premodernism 1 (Male Voices of Literary Realism nad Naturalism)
8. Premodernism 2 (Female Voices of Literary Realism and Naturalism)
9. Interim Review 2
10. Modernism 1 (Modernist Drama)
11. Modernism 2 (Modernist Literary Movements)
12. Postmodernism 1 (Postmodernist Writing Techniques)
13. Postmodernism 2 (Central Issues of Postmodern Literature)
14. Final Review and Term Paper Guidelines

Hours per week / Credits
2 SWS / 6 ECTS

Exam
Seminar paper

Fundamentals of Business Administration for IT and Engineering Students

Prof. Dr. Markus Westner

Ostbayerische Technische Hochschule Regensburg

Abstract:

This course introduces you to the main concepts of Business Administration ("Betriebswirtschafts-lehre") from a managerial perspective. The course requires no specific prerequisites. Examples and case studies are geared towards IT and business projects. The course covers fundamentals as well as management, marketing, internal logistics, and production as main corporate functions.

Course Structure
1.   Introduction
1.1 Why we do business
1.2 Corporate goals and objectives
1.3 Classification of organizations
2.   Management
2.1 Management functions
2.2 Corporate culture
2.3 Strategic management
3.   Marketing
3.1 Product policy (Product)
3.2 Pricing and conditions (Price)
3.3 Communication and advertisement (Promotion)
3.4 Distribution policy (Place)
4.   Internal logistics
1.1 Procurement marketing
1.2 Warehouse management
2.   Production
2.1 Designing production processes
2.2 Production planning and control

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Fundamentals of Business Administration 2 for IT and Engineering Students

Prof. Dr. Markus Westner

Ostbayerische Technische Hochschule Regensburg

Abstract:

The course "Fundamentals of Business Administration 2" serves as a successor to the course "Fundamentals of Business Administration 1" and introduces you to further main concepts of Business Administration ("Betriebswirtschaftslehre") from a managerial perspective. The course requires no specific prerequisites. Examples and case studies are geared towards IT and business projects. The course covers fundamentals as well as marketing, HR management, organization and finance, investment, and accounting as main corporate functions.

Course Structure

1. Marketing & Sales:
   Repetition, Marketing strategies, Product policy (product), Price policy (price), Communication policy (promotion), Distribution policy (place)
2. HR Management:
   Fundamentals of HR management, Assessment of personnel requirements, Recruitment and personnel deployment, Motivation and compensation, Personnel development and termination of employment
3. Organization:
   Fundamentals, Organizational theories, Organizational structures, Organization as planned transformation process
4. Finance, Investment, and Accounting:
   Introduction, Finance, Investment, Accounting

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Fundamentals of Project Management
Business and IT

Prof. Dr. Markus Westner
Ostbayerische Technische Hochschule Regensburg

Abstract
The course "Fundamentals of Project Management" introduces you to the main concepts, standards, methods, and approaches relevant to project management from a managerial perspective. The course requires no specific prerequisites. Examples are geared towards IT and business projects. Apart from covering the fundamental concepts, the courses focuses on the most important activities in project management as illustrated in the syllabus from chapter 3 to 13.

Course structure
1. Introduction
2. Organizational Aspects of Projects
3. Project Selection
4. Leadership and the Project Manager
5. Scope Management
6. Project Team Building, Conflict, and Negotiation
7. Risk Management
8. Cost Estimation and Budgeting
9. Project Scheduling
10. Agile Project Management
11. Resource Management
12. Project Evaluation and Control
13. Project Closeout and Termination

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

Fundamentals of Strategic Management

A Cross-Sectoral Perspective

Prof. Dr. Markus Westner

Ostbayerische Technische Hochschule Regensburg

Abstract

In this course students acquire fundamental knowledge about key aspects of strategic management. The course can be attended without any prerequisites although having attended an introduction course to general management ("Allgemeine Betriebswirtschaftslehre") can be helpful. The course covers fundamental aspects of strategic management such as main terms, the strategic management process and the corporate environment in which strategic management happens. The subsequent chapters then cover strategic analysis followed by strategy formulation and strategy implementation.

Course structure

1. Fundamentals
   - What is Strategy: Definition of Strategy; Competitive Advantage; Industry vs. Firm Effects; Stakeholder Impact; Stakeholder Strategy
   - Strategic Management: Vision, Mission, and Values; Strategic Management Process; Leadership vs. Management
2. Strategic Analysis
   - External Analysis: PESTEL; the Five Forces Model; Industry Dynamics; Strategic Groups
   - Internal Analysis: Core Competencies; The Resource-Based View; Dynamic Capabilities; Value Chain Analysis
   - Joint analysis: Competitive Advantage; Firm Performance; Business Models
3. Strategy Formulation
   - Business Strategy: Differentiation; Cost Leadership; Blue Ocean Strategy; Innovation; Entrepreneurship
   - Corporate Strategy: Vertical Integration; Diversification; Strategic Alliances; Mergers and Acquisitions; Global Strategy
4. Strategy Implementation
   - Organizational Design: Structure; Culture; Control; Balanced Scorecard
   - Corporate Governance: Values; Governance; Ethics

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

IT Support in Supply Management, Part I
Optimised operational processes

Prof. Dr. Ronald Bogaschewsky
Julius-Maximilians-Universität Würzburg

Abstract
Participants acquire knowledge regarding the potential of optimised processes supported by software systems, which is of significant importance for purchasers. Students will learn what types of solutions are available for different procurement tasks. Participants will also learn how the parties involved have to adjust their processes in order to generate the best possible economic benefit. Students will be taught how to pursue projects introducing and rolling-out electronic procurement solutions. Additionally, participants will learn how to motivate staff and users in order to ensure optimised system utilisation.

Course structure
Module 0:
1. Procurement: Tasks and Objectives
2. Categorisation of IT Tools
3. Integrated Strategic and Operational IT-based Processes in Procurement: The SCOPE Specs

Module 1: Optimised Operational Processes
1. Analysis of Operational Processes
2. Optimised Operational Processes
3. eCatalogs and eStandards
4. Usage Models
5. Tasks of the Procurement Function
6. Performance and ROI Analysis
7. Effects of Optimised 02P Processes on Suppliers
8. Project and Change Management
9. Conventional MRP Systems and Execution Systems
10. Electronic Supply Chain Management

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

IT Support in Supply Management, Part II
Strategic processes and tools

Prof. Dr. Ronald Bogaschewsky
Julius-Maximilians-Universität Würzburg

Abstract
Participants acquire knowledge regarding the potential of optimised processes supported by software systems, which is of significant importance for purchasers. Students will learn what types of solutions are available for different procurement tasks. Participants will also learn how the involved parties have to adjust their processes in order to generate the best possible economic benefit. Students will be taught how to pursue projects introducing and rolling-out electronic procurement solutions. Additionally, participants will learn how to motivate staff and users in order to ensure optimised system utilisation.

Course structure
Module 0:
1. Procurement: Tasks and Objectives
2. Categorisation of IT Tools
3. Integrated Strategic and Operational IT-based Processes in Procurement: The SCOPE Specs

Module 2: Strategic Processes and Tools
1. Strategic Issues and Processes in Supply Management
2. Electronic Market Places: Aim, Structure, and Functionalities
3. E-Sourcing: Issues, Processes, and Tools
4. E-Auctions: Principles and Tools
5. Spend Analysis and Supply Market Analysis
6. IT-supported Supplier Relationship Management
7. Collaboration Tools in Supply Management

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

Djing, Skill Management and the Secrets of Personal Branding

Prof. Dr. Christian Zich
Technische Hochschule Deggendorf

Abstract

Tom Peters once claimed in his book "The Circle of Innovation" that we are all Michelangelos. In a way, this course is about discovering the Michelangelo within yourself. Not by exaggerating, polishing the truth and hopelessly presenting one's own abilities too positively. Rather through a structured examination and analysis of one's own abilities and personality. Because at the latest during the job interview the moment of truth has arrived and you have to prove what you really can do. If one aroused too high expectations before by exaggeration, then one harms oneself during the interview that much more.

The course tries to answer the following questions in a structured and scientifically sound way – without losing sight of the practice:

- Do you not want to position yourself optimally while remaining authentic, honest, and credible?
- Would you like to have a concrete result at the end of this course? Do you want to build your own web presence, develop the right communication strategy and produce exactly the content that is interesting for employers?
- Would you also like to invest some time in building your own personal brand?

If you are concerned with these questions, you will take a lot out of the course.

Course structure
1. Course Overview and Introduction
2. Brand and Branding – Definitions, Fundamentals
3. Recruiting Process
4. Personality and Motives
5. Skills: Introduction and Definitions
6. Skills Part 1: Expert Knowledge and Business Expertise
7. Skills Part 2: Intrapersonal Skills
8. Skills Part 3: Interpersonal Skills
9. Developing the Personal Brand Design Guideline

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Seminar paper

Scientific Writing

Prof. Dr. Katja Radon
Ludwig-Maximilians-Universität München

Abstract

"Scientific Writing" in English is a crucial qualification course for students of all disciplines and all skill levels (Bachelor's, Master's, PhD). Specifically for students of natural sciences who are often required to draft texts in English (ranging from letters & e-mails about papers, to abstracts, to posters, to scientific publication and third party applications), this course shall not only help them encounter the "fear of blank page" but also help them overcome the language barrier.

The online seminar "Scientific Writing" aims at targeting students of natural sciences and health sciences who wish to improve their academic writing skills in English. The course helps attaining skills in literature search, drafting various parts of scientific publication & publishing and presenting the results of the scientific publication in English. The objective of the seminar is to provide a brief theoretical introduction on each topic of the course. Exercises with clearly defined tasks give students the opportunity to test what they have learned and applied directly during the flow of the seminar. Thus for example the student has the opportunity to draft one's own scientific publication step-by-step. Immediate feedback from the tutor can help the students with their queries if they are stuck.

Course structure
1. Preparation of the Article
2. The Writing Process
3. Publishing and Presenting

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Seminar paper / Online examination

Business English Scenario Training BEST4Engineers

Prof. Dr. Sylvana Krauße
Technische Hochschule Aschaffenburg

Abstract
The online course Business English Scenario Training for Engineers (or in short BEST4Engineers) is designed for engineering students who want to acquire basic skills for writing e-mails, telephoning and business-related small talk situations. BEST4Engineers consists of two task-based scenarios with six units each. Every unit contains preliminary exercises in which the students gain a deeper understanding of the respective topic. The acquired skills are subsequently applied in their assignments.

Course structure
Scenario 1: A Technical Visit
1. Addressing Requests
2. Exchanging Contact Details
3. Fixing Appointments
4. Rescheduling Appointments
5. Enjoying Dinner Talk
6. Expressing Appreciation

Scenario 2: A Sales Situation
1. Finding Suitable Equipment
2. Talking Numbers
3. Visiting Trade Fairs
4. Calls for Offers and Procurement
5. Handling Complaints
6. Solving Problems

Hours per week / Credits
2 SWS / 2 ECTS

Exam
Written examination

English Competence and Research Training for Health Professionals

Prof. Dr. Christian Rester
Technische Hochschule Deggendorf

Abstract

Chapter 1 introduces you to the most common health care system models. It also gives you background information in order to help you understand the content of this course. In chapters 2 and 3, the focus lies on research skills training. These chapters provide you with insight into the essentials of evidence-based practice and how to search and critically assess the quality of scientific literature. Chapters 4 through 7 have similar structures. Each chapter has its own health and research topic. It starts with a case study which introduces you to the topic and the chapter's learning objectives. After that, two different scientific articles or documents are presented. Those ones serve as the basis for the upcoming research skills and English competence training.

This course is designed for students from different health fields (e.g., nursing science, physical therapy, health science) who want to broaden their knowledge of research skills and improve their use for selected health topics. Before you start the course, you need to know how to access a full text article from a common scientific database (e.g., CINAHL). Furthermore, you should have basic knowledge of descriptive statistics and the main study designs and methods used in the health care sector (e.g., systematic review). It is important to emphasize that this course is not an English class that focuses on teaching vocabulary or reviewing grammar. To ensure successful participation and good results, a Common European Framework of Reference for Languages (CEFR) level of B2 in English, or at least four years of English lessons, are highly recommended.

Course structure
1. Getting to Know Different Health Care Systems
2. Studying the Principles of Evidence-Based Practice
3. Searching and Appraising Literature
4. Physical Health and the Way towards it
5. Challenges of an Aging Society
6. Successful Pain Assessment and Management
7. Health Promotion for Long-Lasting Health

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

English for Studying, Working, and Living Abroad (B2.2)

Emma Phelan, Anna Tüchert, Vincenzo Spagnolo
Julius-Maximilians-Universität Würzburg

Abstract

This is an online skills course for students from all academic fields. This course is designed for the student that would like to go abroad to study and/or work and is oriented on the B2 level of the Common European Framework. "English for Studying, Working, and Living Abroad" will concentrate on covering letters, email communication and banking, housing/accommodation, and survival skills all with a touch of intercultural training. It is a task-based course where students learn to identify key vocabulary in job adverts and assess their skills using a SWOT (strengths, weaknesses, opportunities, and threats) analysis. The participants write a covering letter and improve email writing skills through:

- email register
- correct word usage

Furthermore, they improve intercultural skills through vocabulary and terminology in:

- banking
- finding accommodation
- arranging a medical appointment and going to the doctor

Course structure
1. Job Descriptions and Covering Letters
2. Email Communication
3. Banking/Housing/Accommodation and Dealing with Medical Appointments

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Modular tests

English for Sustainable Technologies – Re-newable Energy, Smart Buildings, and Electric Mobility (CEFR Level B2)
Introductory Course

Prof. Dr. Isabell Vollmuth, Bill Field
Hochschule für angewandte Wissenschaften Landshut

Abstract
This course covers the three topics of renewable energy, smart buildings, and e-mobility. The learners will gain a deeper understanding of these topics and their development in Germany, and, very importantly, improve their English skills as they relate to these subjects. Learners will use their listening, reading, writing and grammatical skills in completing the course units for all subjects.

Course structure
Unit 1: Introduction

Module: Renewable Energy
Unit 2: Solar Technologies
Unit 3: Wind Technology
Unit 4: Hydropower
Unit 5: Renewable Energy for the Future

Module: Smart Buildings
Unit 6: Building Design
Unit 7: Building Management Systems
Unit 8: Passive Buildings
Unit 9: Intelligent Workplaces and Dwellings

Module: Electric Mobility
Unit 10: Hybrid Technology
Unit 11: Electric-only Cars
Unit 12: Other Renewable-mobility Technologies
Unit 13: The Future of Transport

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

English Vocabulary and Usage for Physics C1

Peter Hull, Dr. Gunter Lorenz
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
"English Vocabulary and Usage for Physics C1" is aimed at the development and expansion of students' subject-specific vocabulary at C1 level. The course is designed to allow learners to improve both their vocabulary range and the accuracy of its usage.

Course structure
1. Empirical and Experimental Work
2. Mathematics and Calculation
3. Presentations and Talks
4. Important and Famous Theories
5. Argumentation and Data

- The course consists of 5 modules, each associated with a different aspect of the use of English in physics.
- Each module uses its topic as a vehicle for the development and expansion of the learner's vocabulary range and the correct, natural usage of this terminology.
- The modules each contain notes, written exercises, and listening exercises, allowing students to train the correct application of the vocabulary introduced.
- The course will be graded on the basis of a single written examination at the end of the semester, the details of which will be published directly in the course during the semester.

Hours per week / Credits
2 SWS / 2.5 ECTS

Exam
Written examination

e-Xplore Technical English®

Prof. Dr. Uwe Bellmann

Abstract
Just as conventional foreign language text books, this course is also comprised of several units, with each dedicated to specific technical, terminological, functional and grammatical focal points. In addition to the units, a terminology trainer and two C-tests are included. The course also offers a fundamental grammar review and an up-to-date glossary. Contextual usage and word meaning can be comfortably explored by means of the tools offered. The course is complemented by so-called short guides: a pool of useful information and exercises for adult learners of English. Furthermore, there is a comprehensive list of recommended links to diverse websites which support further English language learning on an ongoing basis.

Course structure
Central components of the units are texts for reading and listening comprehension, which represent a variety of relevant text sorts. These are introduced and followed up through useful assignments and exercises such as:

- Researching Information
- Vocabulary and Terminology Introduction
- Grammar Introduction
- Practice in Text Reconstruction
- Multiple-Choice Tasks
- Matching Tasks
- Dictation Practice
- Pronunciation Practice
- Text Analysis Assignments of Various Kind
- Quizzes

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Online examination

Flaw and Order

The Grammar of Word Order and Information Structure in English

Dr. Gunter Lorenz

Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

"Flaw and Order" is aimed at advanced learners of English who study English as a main subject. It is intended as an online component of a classroom course; it is not recommended for use without an on-campus course at your university. Ideally, "Flaw and Order" would be used to complement a course in academic writing or other formal types of text production. It focuses on the rules of word and constituent order in English (part 1) as well as on the application of the principles of information structure (part 2). Even advanced students of English are not always aware of where to put the most relevant, new, or weighty information in a sentence. The course "Flaw and Order" attempts to make learners aware of this deficit and of ways of remedying it. Due to the limitations of the online medium, the application of the principles acquired needs to be trained in practical writing classes. The computer can in no way replace intelligent human teaching and feedback here.

Course structure
1. Word Order Rules in English (3 Units)
2. Principles and Grammar of Information Structure (4 Units)

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

German as a Second Foreign Language. German after English

A level A1 German course using the English language knowledge of the learners

Dr. Thomas Stahl
Universität Regensburg

Abstract

Based on tertiary language didactics, the course provides basic knowledge on the A1 level for learners of German who want to learn German quickly and efficiently with the help of their English skills. The focus is on receptive skills.

Course structure

Module 1: Vocabulary

- Internationalism and Anglicism
- similar words, important differences
- Strategies for vocabulary learning

Module 2: Grammar

- the verb in focus
- the noun in focus
- the adjective in focus

Module 3: Reading comprehension

- Reading strategies
- different text types e.g. advertisements, e-mails, articles

Module 4: Typical everyday situation

- Travel
- Food
- at the university

Hours per week / Credits

2 SWS / 3 ECTS

Exam

Assessed tasks and module tests (online)

International Project Management B2

Prof. Dr. Isabell Vollmuth, Bill Field
Hochschule für angewandte Wissenschaften Landshut

Abstract
This course covers the four themes of Communication Media, Tools for International Project Management, Intercultural Conflicts/Challenges in an International Environment, and Project Management. The learner will gain a deeper understanding of these themes, their development in Germany, and very importantly, improve their English skills as they apply to these subjects. Learners will use their listening, reading, writing and grammatical skills in completing the course units for all subjects.

Course structure
1. Introduction
2. E-Mail/Informal Written
3. Presentations
4. Teleconferences/Telephoning
5. Software Tools
6. Rapid Prototyping
7. 3-D Printing
8. High and Low Context Cultures
9. Verbal and Non-verbal Communication
10. Dealing with Intercultural Conflicts
11. Documentation
12. Managing People
13. Managing Across Boarders

Hours per week / Credits
2 SWS / 2 ECTS

Exam
Written examination

Preparatory Technical English B1/B2
Introduction to Technical English

Mike Schwer
Technische Hochschule Nürnberg Georg Simon Ohm

Abstract
The demand for individuals who can read and communicate in English is steadily growing. Needless to say, English is definitely important in any career field!
This course is designed for self-study. This means that the participants are required to read articles, technical papers, watch videos in order to solve regular quizzes. Each module (five modules in total) introduces elements of Technical English found in mandatory classes and in the business world.

If you want to increase your ability to read journals and papers written in English,
If you want to practise and improve your English grammar skills,
If you are interested in science,

        ...then this course is for you. Engineer or not.

Course structure
Module 1: Welcome to Technical English
Module 2: Applied Physics and Mathematics
Module 3: Biology
Module 4: Chemistry
Module 5. Business English
The sixth module contains information pertaining to the final examination. Because of this, it will remain closed until the month before in-house final examination in Nürnberg.

Hours per week / Credits
2 SWS / 2 ECTS

Exam
Written examination

ReMedial Verb Grammar Advanced

An online error correction module for advanced learners of English (C1)

Dr. Gunter Lorenz

Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

"ReMedial Verb Grammar Advanced" is intended to help advanced learners of English better to understand how grammar works in context – at their respective individual paces. The course is not intended as yet another grammar of English; there are plenty of good student grammars available already. Nor is it strictly a grammar course, with basic structures at the beginning and a systematic progression to more complex ones. In the exercises, all finite and non-finite verb forms can come up, and in our explanations we presuppose a reasonable awareness of the actual rules and give reminders of how they are to be applied in context. "ReMedial Verb Grammar Advanced" is intended as an online component of a classroom course; it is not to be recommended for use without backup at your university or polytechnical college.

In order to get credits (ECTS) for this course, you need to fulfil the following conditions:
- Certificate of participation for completing the course
- 1 ECTS for course completion plus extra exam in Erlangen
- 1-4 ECTS for course completion plus regular exam as part of a university course

Please note also that you need to indicate your interest in a certificate and/or ECTS at the beginning of the semester. In that case, please contact the FAU tutors (sz-englisch-online@fau.de). You also need to find out from the course tutors/lecturers of your home university whether you can use the ECTS for your programme/course of study.

Course structure
- Finite and non-finite verb forms
- 6 + 6 test units (exam mode and exercise mode)

Hours per week / Credits

2 SWS / 1-4 ECTS

Exam

Written examination

SoundAdvice. A university training course for the pronunciation of British English

Dr. Gunter Lorenz

Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

"SoundAdvice" is an intensive training course for the main features of the pronunciation of British English. The course was specifically designed for German-speaking English students who are familiar with the main theoretical concepts of English phonetics. Students from other fields with a high proficiency level of English (B2+), however, are perfectly welcome to join "SoundAdvice", too.

This online course serves as a learning tool for the pronunciation of English; it seeks to support and strengthen the following areas of proficiency:

- accurate pronunciation
- self-monitoring and -correction
- reading skills/structuring longer text passages
- familiarity with authentic speech contexts and idiomaticity
- spoken English fluency

Course Structure

A.   Pronunciation Pitfalls, Rhythm, and Weak Forms
B.   Articulation: The Sounds of English
C.   Intonation: Basic Tones and Reading Fluency

Hours per week / Credits

2 SWS / 2.5 ECTS

Exam

Oral Examination

Technical English for Mechanical Engineering B2

Mike Schwer

Technische Hochschule Nürnberg Georg Simon Ohm

Abstract

The main objective of this course is to introduce students to English grammar and vocabulary relating to Mechanical Engineering. Although this course is specifically aimed at Mechanical Engineering students, any student who wishes to improve their English skills, specifically within mechanical engineering, is a perfect candidate for this course.

Subjects include material technologies, alternative energy as well as machining and forming methods. You, the student, will interact with the English language from a technical aspect by reading relevant articles and papers and by completing grammar, listening and reading comprehension exercises.

The course is designed for self-study, where participants are required to solve regular quizzes and complete assignments. The main goals of this course are to improve your vocabulary and ability to read and comprehend technical papers in English.

Course Structure
- Module 1: Tools of the Trade
- Module 2: Thermodynamics
- Module 1 & 2 Review
- Module 3: Materials Science
- Module 4: Automobiles
- Module 3 and 4 Review
- Module 5: Machining Techniques
- Module 6: Renewable Energy
- Module 5 and 6 Review
- Module: Mock Examination

Hours per week / Credits
2 SWS / 2 ECTS

Exam
Written examination

Technical Writing for Scientists and Engineers (B1/B2)

Mike Schwer

Technische Hochschule Nürnberg Georg Simon Ohm

Abstract

This course is for students who plan to study or work in an English-speaking country, want to publish internationally (i.e., journal articles, patents, product descriptions) or frequently come into contact with English due to their chosen field of study. Students learn how to organize and express facts and ideas through written text in order to create documents for the workplace.

Course structure

Topic 1:   The Writing Process (Organising Ideas and Creating Outlines, from the Outline to the First Draft, Scrutinising your Text, Module Revision Test)

Topic 2:   Letters, Emails, and Beyond (Correspondence, Netiquette, Negation, Did You Know?, Module Revision Test)

Topic 3:   Describing Your Data (SI Units and Technical Writing, Tables, Graphs and Charts, Did You Know?, Module Revision Test)

Topic 4:   Writing Instructions (Instructions, Expressing Mood, Capitalization, Did You Know?, Module Revision Test)

Topic 5:   Intellectual Property (Trade Secrets, Passive Voice, Did You Know?, Module Revision Test)

Hours per week / Credits

2 SWS / 2 ECTS

Exam

Written examination

==winter term only==

isiXhosa Online Language Course Part 1: Initial Course

Prof. Dr. Gabriele Sommer
Universität Bayreuth

Abstract
IsiXhosa is a Nguni language of the South-Eastern Bantu language family and became one of the official languages of South Africa in 1994. This online language course provides basic isiXhosa language skills in grammar, vocabulary, cultural background and conversation for beginners. The course has been developed in cooperation with the Anthropology Department of Ludwig-Maximilians-University Munich and in close cooperation with the Department of African Languages at the University of Fort Hare (South Africa).

Course Structure
The course contains two parts with ten units each:
Part 1: isiXhosa Online Course: Initial Course (Part 1 only starts in Winter (October)
Part 2: isiXhosa Online Course: Basic Course

Every unit is divided into A. Learning Units, B. Vocabulary, and C. Grammar Background.

Part 1: Initial Course
Unit 1: Introduction
Unit 2: Nkosi Sikelel' iAfrika
Unit 3: Tshotsholoza
Unit 4: Ukuthenga impahla
Unit 5: Traditional Xhosa Meals
Test 1: for all participants
Unit 6: Xhosa Imbongi
Unit 7: Xhosa Intsomi
Unit 8: Marriage Practice
Unit 9: Prophetess Nongqawuse
Unit 10: Hlonipha Custom
Final test 1: contains questions from Units 1-10

Hours per Week/ Credits
4 SWS/ 5 ECTS

Exam
Web-based written examination

isiXhosa Online Language Course Part 2: Basic Course

Prof. Dr. Gabriele Sommer
Universität Bayreuth

Abstract
IsiXhosa is a Nguni language of the South-Eastern Bantu language family and became one of the official languages of South Africa in 1994. This online language course provides basic isiXhosa language skills in grammar, vocabulary, cultural background and conversation for beginners. The course has been developed in cooperation with the Anthropology Department of Ludwig-Maximilians-University Munich and in close cooperation with the Department of African Languages at the University of Fort Hare (South Africa).

Course Structure
The course contains two parts with ten units each:
Part 1: isiXhosa Online Course: Initial Course (Part 1 only starts in Winter (October)
Part 2: isiXhosa Online Course: Basic Course

Every unit is divided into A. Learning Units, B. Vocabulary, and C. Grammar Background.

Part 2: Basic Course
Unit 11: Ntaba kaNdoda – The Sacred Mountain of the AmaXhosa
Unit 12: Khaya La Bantu – Cultural Village
Unit 13: Xhosa Beadwork
Unit 14: The Role of Time in Xhosa Culture/The Calendar
Unit 15: Khotso Sethuntsa: Millionaire Medicine Man
Test 2: for all participants
Unit 16: isiXhosa Orthography
Unit 17: Archibald Campbell Jordan
Unit 18: Traditional Attire of Xhosa Females
Unit 19: Dialects of isiXhosa
Unit 20: Sindiwe Magona
Final test 2: contains questions from all lessons of the initial and the basic course, i.e., Units 1-20

Hours per Week/ Credits
4 SWS/ 5 ECTS

Exam
Web-based written examination

European and International Monetary Law

Prof. Dr. Christoph Herrmann
Universität Passau

Abstract
Law students will be equipped with a basic understanding and knowledge of the structure and functioning of modern monetary systems as well as the fundamental legal frameworks that govern them at international and European levels. This will enable them to independently and critically assess developments and issues in this particular field from a legal point of view on the basis of EU and international law. Students of international economics and of public policy/governance will be able to describe and understand international and European monetary law from a legally informed perspective and therefore assess issues in monetary law from a basic legal point of view. They will have broadened their existing knowledge in the fields of economics and political science through an interdisciplinary approach to international monetary relations.

Course structure
A. Interdisciplinary Introduction
B. International Monetary Law
- Monetary Sovereignty under Public International Law
- History of International Monetary Law
- Fundamental Legal Problems of International Monetary Relations
- The International Monetary Constitution: The IMF Articles of Agreement – Institutional Design and Decision-making and Substantive Legal Obligations

C. European Monetary Law
- History of Monetary Integration in Europe
- The Legal Framework of EMU post Lisbon – Institutional Setup and Substantive Legal Rules
- EMU and the Sovereign Debt Crisis – Measures and Legal Assessment

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Written examination or essay

European Trade and Investment Policy and External Trade Law

Prof. Dr. Christoph Herrmann
Universität Passau

Abstract
The course builds on existing knowledge in the field of EU Law and basic knowledge of World Trade Law in order to provide students with special and in-depth knowledge of European external trade and investment law as well as policy. The course deals with three of the main topics of the European Unions' common commercial policy: external trade law, customs law, and investment law. Within the framework of the common commercial policy the Member States have nearly fully transferred their sovereign rights to the European Union, lastly through the Treaty of Lisbon (2009). Since the 1960s, the European Union has enacted comprehensive regulations on trade policy and has negotiated various comprehensive trade and investment agreements. The most critically acclaimed recent novelty is the extension of the EU's exclusive competence for the CCP to include foreign direct investment.

Course structure

A. European External Trade Law

- The European Union Customs Union
- The Application of European Customs Law
- The Development and Current Status of European External Trade Law
- The Objectives and Instruments of European External Trade Law
- The Division of Competences in European External Trade Law

B. European External Trade Policy

- The Treaty-Based European External Trade Policy
- The Autonomous European External Trade Policy

C. European Investment Policy

- The Development of European Foreign Investment Law
- The Division of Competences in European Foreign Investment Law
- Intra-EU Bilateral Investment Treaties
- The European International Investment Policy

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Written examination

External Relations Law of the European Union

Prof. Dr. Christoph Herrmann
Universität Passau

Abstract
This course provides an introduction to the law of the European Union's (EU) external relations. It is aimed at students of law as well as Governance or (European) Public Policy programs. The external relations of the EU are of great legal and practical importance. The EU is an active international actor, for example by concluding international agreements, participating in the work of international organisations or legislating foreign relations matters. This practice gives rise to many legal questions which often have constitutional significance and thus require the involvement of the Court of Justice of the European Union.

Course structure:
1. Introduction and Basics of Public International Law
2. The EU as an International Legal Actor
3. The Existence of EU External Competence
4. The Nature of EU External Competence
5. The Legal Foundation of EU External Action
6. Loyalty in External EU Relations
7. EU Treaty-Making: Procedure and Practice
8. Mixity
9. The Effect of International Law on the EU's Legal Order
10. The EU's Relationship with International Organisations and International Courts
11. Common Commercial Policy and EU Trade and Investment Treaty-Making
12. Common Foreign and Security Policy
13. Enlargement and European Neighbourhood Policy
14. Brexit

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Written examination

German Company Law

Prof. Dr. Christoph Teichmann
Julius-Maximilians-Universität Würzburg

Abstract
The course takes the form of a text-based script which, in addition to theoretical discussion, includes cases, their solutions, and review questions. Combined with a discussion forum, the course script will enable students to gain a basic understanding of German company law in an international context. The course emphasis lies upon the characteristics of German law, which distinguish it from other jurisdictions. The course therefore enables students to gain knowledge of the legal framework within which companies operate and also offers the opportunity to improve technical English skills.

Course structure
1. Introduction
2. Director's Remuneration
3. Corporate Mobility and International Company Law
4. Partnerships (1. GbR and OHG; 2. KG)
5. GmbH
6. Corporate Governance in the AG
7. Employees' Co-determination
8. Capital and Creditor Protection
9. Group Law

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Written examination

Legal Issues of Regional Economic Integration

Prof. Dr. Christoph Herrmann
Universität Passau

Abstract
The course starts with an introduction unit describing the international economic system that is based on two pillars, namely multilateral relations, e.g. the regime of the World Trade Organization (WTO), and bi-, respectively plurilateral relations in the form of regional trade agreements (RTAs). The course also provides an overview of the legal and institutional foundations of regional economic integration with regard to the WTO system and a three-unit specialisation on three specific legal issues related to regional integration of merchandise trade. Further, the course covers the essential issues that are subject matter of so-called "21st century trade agreements" like the TPP or CETA.

Course structure
1. Regional Economic Integration through Law: an Introduction
2. Legal and Institutional Foundations of Regional Economic Integration
3. Structural Features of Regional Economic Integration
4. Regional Integration of Merchandise Trade
5. Preferential Rules of Origin
6. SPS Regulation in RTAs and Regulatory Cooperation
7. Customs and Trade Facilitation
8. Regional Integration of Services Trade
9. Bilateral and Regional Protection and Liberalization of Investments
10. Bilateral and Regional Protection of Intellectual Property
11. Regional Commitments on Competition Policy and Trade Defence Instruments
12. Regional (Free) Movement of Natural Persons
13. Monetary Union
14. REI Entities in Global Governance: the EU
15. Regional Economic Dis-Integration: the Brexit

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Written examination

Advanced Occupational Safety and Health

Prof. Dr. med. Hans Drexler, Prof. Dr. Katja Radon
Ludwig-Maximilians-Universität München

Abstract

The course is divided into two parts, "Biological Monitoring in Occupational Health" (Part 1) and "Occupational skin diseases" (Part 2). Part I begins with the basic aspects of anatomy, physiology, and toxicology. The knowledge of these is a fundamental pre-requisite for understanding the concept of "Biological Monitoring in Occupational Medicine". The most important aspects of biological monitoring are then explained with the help of realistic cases. Part II deals with skin diseases that are occupationally-induced. After an introduction of the fundamental aspects of the structure and functions of the skin, the most common occupationally-induced skin diseases are presented using realistic cases. The cases are presented with the help of case stories, photographs, and expert comments. The case stories illustrate the causes, symptoms, diagnoses, biomonitoring methods, lines of therapy, and preventive measures. The user-friendly learning tool, CASUS, provides the learning platform for the cases. At the end of the course the student will have gained knowledge and understanding of the basic concepts and methods in biological monitoring and occupational dermatoses.

Course structure
Part 1: Biological Monitoring in Occupational Health
Part 2: Occupational Skin Diseases

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Online examination

Applied Epidemiology

Prof. Dr. Katja Radon
Ludwig-Maximilians-Universität München

Abstract
The course teaches the basics of epidemiology with a focus on application. The theoretical concepts will be presented by an example study and the individual phases of an epidemiological study will be run through from the perspective of an intern in a scientific team.

Course structure
A. Introduction: CASUS, course structure and certificates
B. What is epidemiology and why is it important?
- Definition of epidemiology and examples from the past and the present
- Health and populations
- The epidemiological research process

C. Measuring and comparing population health
- Measures of disease frequency: Incidence and Prevalence
- Measures of association and impact
- Average values and distributions of health risks in the population
- Study designs in epidemiology

D. Conducting an epidemiological study
- Planning an epidemiological study
- Fieldwork
- Potential sources of error
- Statistical analyses and interpretation

E. Closing and evaluation of the acquired knowledge

Hours per week / Credits
2 SWS / 2 ECTS

Exam
Online examination

IEM - Introduction to Engineering Mathematics

Basics Mathematics, Calculus and Differential Equations

Prof. Dr. Hans-Stefan Siller
Julius-Maximilians-Universität Würzburg

Abstract

Mathematics is a challenge for first-year students in physics, chemistry, biology, computer science and all engineering sciences. On the one hand, freshmen at the university are not as familiar (as they should be) with school mathematics, on the other hand, they are confronted with a kind of "new" mathematics, university mathematics, which has its own way of thinking. New concepts emerge, a new (symbolic) language needs to be learned, and there are new problems and situations that go beyond the content covered in school. Many students are therefore overwhelmed and may even abandon their studies for this reason. This course repeats important mathematical concepts of school mathematics and introduces the basic concepts of university initial mathematics. The aim is to enable students to solve typical scientific and engineering problems with mathematics. This course is not just a "calculus or formula course", but aims to develop a basic understanding of the most important concepts of analysis – numbers, sequences, functions, equations, derivative, integral, differential equation – in simple application situations. For this purpose, the understanding of the mathematical concepts is developed on an intuitive and often visual level, also with the help of dynamic and interactive computer presentations.

Course structure

1. Functions (from linear to trigonometric and exponential functions, insight into functions of several variables)
2. Sequences and Limits (properties of sequences, limits of sequences and functions, continuity)
3. Equations (linear, quadratic, polynomial, trigonometric, exponential equations)
4. Derivation (derivations of basic functions, extreme value problems)
5. Integral (main theorem of differential and integral calculus, integrals of elementary functions, integration techniques)
6. Differential Equations (ordinary differential equations of first and second order)

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Written examination

Imaging in Astronomy

Prof. Dr. Matthias Kadler, Prof. Dr. Joern Wilms
Julius-Maximilians-Universität Würzburg

Abstract

In contrast to other natural scientists, astrophysicists cannot experiment with the objects of their interest. With a few exceptions, all knowledge of the physics of objects in the Universe must be obtained from the electromagnetic radiation emitted by them. Besides the analysis of spectra and light curves, the investigation of images of astrophysical sources is therefore one of the most important tools in astrophysics. In addition to images in visible light, imaging instruments are used in all wavelength ranges, i.e., from radio to gamma-rays.

This course is divided into four blocks: Introduction, basic methods of image processing, advanced methods and outlook. The fundamental concept of this on-line course is the close interaction between theory and hands-on exercises using data of ground- and space-based instruments. This happens through the combination of interactive lectures, which cover the theoretical basics, complemented by step-by-step tutorials where the student gets used to data processing, and the implementation and application via python (JUPYTER notebooks).

Course structure
1. Image Acquisition
2. Image Processing
3. Advanced Image Processing
4. Outlook

Hours per week / Credits
4 SWS / 6 ECTS

Exam
Student project

Policy Making in the European Union

Institutions and Decision-Making Processes in the European Migration and Asylum Policy

Prof. Dr. Daniel Göler
Universität Passau

Abstract

This English-language course deals with the structures and the internal decision-making processes of the European Union (EU). For giving you a better understanding of this process, the theoretical knowledge about the European system is supplemented with insights into a special policy field of the EU, the European Migration and Asylum Policy. By attending this course you can learn everything about the basics of the EU, the internal structure of its bodies, the European Migration and Asylum Policy as well as the impacts of the migration and asylum debate of the EU as a whole.

Course structure

Part 1: Learning the Basics: The Multi-Level Governance System of the EU

- The Emergence of the EU: Stages of Development from the Treaties of Rome until Today
- The European Union: An Association of States sui generis?
- How Does the EU Work? Theoretical Background and Instruments of Analysis

Part 2: Decision-Making Processes in the EU

- Political Decision-Making in the EU between Deliberation and Bargaining
- The Institutional Structure I: European Council and European Commission
- The Institutional Structure II: European Parliament and Council of the European Union

Part 3: Case Study: The European Migration and Asylum Policy

- Still Supranational Decision-Making in the EU? The Migration and Asylum Policy
- The Dublin Regulations and their Challenges
- Current Challenges Caused by the Migration and Asylum Policy

Part 4: Changes and Impacts by the Migration and Asylum Debate in the EU

- Impacts of Nationalism and Euroscepticism on the European and National System
- Does the EU Fail or Will We Get Another Union?
- Consolidating Results and Concluding Discussion, Final Exam

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Position paper or written examination

Regionalism and Global Governance

Prof. Dr. Bernhard Stahl
Universität Passau

Abstract
The course examines the wide spectrum of promising potential and high hurdles regional integration faces. Various regional organizations (ROs) are presented and analysed. The main focus is placed on the analysis of institutional characteristics of ROs (structures, decision-making processes) as well as their role in providing governance functions in the global context. Against the background of inter-regional agreements' increasingly displacing global, multinational agreements, ROs play an increasing role for 'global governance without global government'.

Course structure
Chapter 1: Introduction and Theories
- Introduction
- Liberal Institutionalism
- Theories of Regional Integration
- Sociological Neo-Institutionalism

Chapter 2: Regional Organizations (ROs) – Cases and Analysis
- African ROs
- Arab ROs
- Pan- and Latin American ROs
- North American ROs
- Asian ROs
- European ROs

Chapter 3: ROs and Global Governance
- "Second-Best Solutions" – Interregionalism as an Answer to Stalling Global Governance?
- Interregionalism and the EU
- Legitimacy and Acceptance of ROs
- Closing Session, Academic Writing

Hours per week / Credits
2 SWS / 3-10 ECTS

Exam
Seminar paper

International Approaches of Social Work and Human Rights

Prof. Dr. Claudia Lohrenscheit
Hochschule für angewandte Wissenschaften Coburg

Abstract

The course consists of two main parts (altogether seven modules) and two additional modules (excursus) which you can study separately or jointly. All modules include materials such as text, videos, photos, and activities. At the end of each module, there is a list of suggestions for further readings, as well as a discussion forum for sharing your thoughts, ideas, and comments regarding the contents and activities.

The first part, entitled Social Work and Children's Rights, provides an in depth introduction to universal children's rights. After you have learned in depths about the Children's Rights Convention, you are now ready to broaden your perspective and go to the second part. The second part of the course, entitled (Dis-)Ability and Inclusion, comprises two core modules focusing on the UN-Convention on the Rights of Disabled Persons (CRPD). You will get to know more about the UN, the historical development of human rights protection at the UN based on the Universal Declaration on Human Rights (1948) and the CRPD. Furthermore, as part of an excursus, two additional modules are provided for all learners who are interested to deepen their knowledge using an approach of historical learning in human rights education.

Course structure
Part I. Social Work and Children's Rights
1. Convention on the Rights of the Child
2. Childhood in a Global/Local Context
3. Play, Education, and Work
4. The Sense of Belonging
5. Human Rights Education with Children
Part II. Social Work, Disability and Inclusion
1. The United Nations and the Convention on the Rights of Disabled Persons (CRPD)
2. Social Work and Social Inclusion
Excursus I & II: Historical and Current Perspectives

Hours per week / Credits
4 SWS / 5 ECTS

Exam
Seminar paper

Foreign language learning and teaching with digital media

Prof. Dr. Thorsten Piske
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract

Through the nine modules of this course, students of foreign language didactics become acquainted both with basic issues of digital media in EFL classrooms and with the practical usage of digital tools therein. The latest digital media will be introduced against their theoretical background and will be analyzed, critically reviewed and creatively adapted to meet the requirements of contemporary FL didactics. This course examines various pros and cons of digital tools for learning processes and prepares students to reasonably integrate digital instruments into their own future teaching, with a prime focus on aspects of Task Based Language Learning, Intercultural Communicative Competence and Content And Language Integrated Learning.

Within each module, course participants are required to read embedded PDFs and sometimes do exercises to check their comprehension. Some modules also include developing your own schedule outline of lessons and sharing your ideas with other course members in a task-specific forum. This course aims for proficiency in the field of media didactics and a thorough understanding of how to enrich foreign language learning and teaching efforts with digital media. Students become aware of innovative ways to digitally enhance EFL lessons and reflect upon both the benefits and disadvantages of digital tools.

Course structure
1. The Importance of Media Didactics for FL Learning and Teaching
2. Teaching and Learning with Digital Media
3. Creating Digital Media
4. Aspects of Presenting with Digital Media
5. TBLL and Digital Media
6. ICC and Digital Media
7. CLIL and Digital Media
8. Mobile Learning and Digital Media
9. Social Media and Cyberbullying

Hours per week / Credits
2 SWS / 3 ECTS

Exam
Written examination

Foundations of CLIL (Content and Language Integrated Learning)

Prof. Dr. Heiner Böttger
Katholische Universität Eichstätt-Ingolstadt

Abstract

The online seminar "Foundations of CLIL (Content and Language Integrated Learning)" is an English module for the subject-didactical training in the field of anglistics/American studies. In addition, it is also used for additional and further teacher training. It imparts basic competences in the field of didactics of bilingual subject instruction, known within expert discussions as the acronym CLIL. The training within the online seminar concerning the didactics of foreign language teaching is also a meta-didactical one: the various production- and competency-orientated as well as diverse task formats are at the same time exemplary for methods, which are ideally used in CLIL teaching. This also applies to the exemplary test forms comprising open and closed tasks, which merge into a comprehensible evaluation. The study conditions are transparent due to the ten clearly structured units. The corresponding task cards teach students to be flexible within the setting of time standards and deadlines, thanks to their open workshop character. Because of collaborative course elements, students will have access to a growing pool of materials, which also provides a foundation for an individual, reflected media collection for independent teaching in the course of internships, traineeships or daily "teacher life."

Course structure
1. Introduction to CLIL
2. Language acquisition revisited
3. Towards multilingualism
4. Literacy Learning in CLIL
5. Early CLIL
6. Lesson planning - 4Cs Framework
7. Lesson planning - Scaffolding
8. Error analysis and feedback
9. Assessing CLIL
10. Developing CLIL material

Hours per week / Credits
2 SWS / 4 ECTS

Exam
Portfolio

Global Education

Focus on languages

Prof. Dr. Heiner Böttger

Katholische Universität Eichstätt-Ingolstadt

Abstract

"Global Education" as a holistic concept provides pedagogic as well as didactical answers to questions on globalization, cultural diversity, and the development of the world's society. The roles languages and language acquisition play in this context will be the main focus of the online seminar.

Course structure

1. Global (Language) Skills
2. Media Education
3. Conflict Resolution
4. Sustainability Education
5. Workshop I
6. Workshop II
7. Global Citizenship or Human Rights & Responsibilities or Intercultural Education
8. Global Citizenship or Human Rights & Responsibilities or Intercultural Education
9. Workshop I
10. Workshop II

Hours per week / Credits

2 SWS / 4 ECTS

Exam

Project

History of Mathematics

Prof. Dr. Jörn Steuding
Julius-Maximilians-Universität Würzburg

Abstract

The course deals with selected topics from the history of mathematics from its origins to the Enlightenment to the change to Modern Mathematics (e.g., the priority dispute between Leibniz and Newton about differential and integral calculus or Mathematics in the National Socialist period). By using network maps and in-depth essays, these aspects are discussed in other scientific and cultural contexts.

Learning objectives
- Overview of the development of mathematics from its origins to modern times
- Getting to know specific aspects of the history of mathematics
- Scientific literature research
- Reading and autonomous writing of scientific texts in the English language

Course structure
1. Introductory Words
2. Origins
3. Renaissance
4. The Priority Dispute between Leibniz and Newton
5. Enlightenment and Scientific Revolution
6. Progressive Actors in the Field of Algebra
7. Modern Mathematics
8. Mathematics in the National Socialist Period
9. Women in Mathematics
10. References

Hours per week / Credits
2 SWS / 5 ECTS

Exam
Seminar paper

Primary Education across Europe

Prof. Dr. Sabine Martschinke, Dr. Günter Renner
Friedrich-Alexander-Universität Erlangen-Nürnberg

Abstract
The course will initially show the most important developments in the internationalisation of education. It will also address key questions surrounding the tasks and functions of primary schools and primary school teacher training in international comparison. A further part of the course will describe selected education systems in Europe. This section will focus particularly on primary schools and primary school teacher training. Each description will be accompanied by information on the historical and cultural context of each country.

Course structure
The seminar consists of six learning modules that explore the subject of Primary Education across Europe from a variety of perspectives:
1. Educational Systems in Europe
2. Teaching and Learning in Primary Education in Europe
3. Assessment in Primary Education in Europe
4. All-day School in Primary Education in Europe
5. Inclusive Education in Primary Education in Europe
6. Mobility and Internationalisation

Hours per Week / Credits
2 SWS / 3 ECTS

Exam
Seminar paper