Information Systems (M.Sc.)

25 Credits have to be performed to complete the elective courses. In agreement with the Academic Director you may choose other courses offered by the Pforzheim Graduate School, if the amount of Workload and the amount of credits are equivalent.

Semester 1

BAE6011 - Advanced Software Engineering I	
ID	BAE6011
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	45 minutes
Language	German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lecture with project
Key words	software engineering
Responsible:	Raphael Volz
Objectives	
Catalog Entry	

Content	
Workload	30h Presence, 30h Project, 30h Pre- and Post-Editing
Miscellaneous	

BIS5015 - Information Management	
ID	BIS5015
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLH/PLR
Examination time	60 minutes
Language	English
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Interactive approach
Key words	Information Management
Responsible:	Johnston, Kevin
Objectives	By the end of the course students should: • understand challenges in designing, implementing, and managing companywide information systems infrastructure in global environments, • know specific business models and strategies used in IS, and

	how to transform existing business models and establish new business models, • have an in-depth understanding how to align business strategy and IT/IS strategy, • have experienced management issues (e.g. project management and change management) in implementing information systems in global environments, • have an in-depth understanding how to use IT/IS to establish new business models and to transform existing business models of companies • have used critical thinking and questioning in working on unstructured and complex problems integrating knowledge of business, strategy, psychology and information technologies, • have expressed ideas, findings, conclusions and questions clearly, logically, and persuasively in oral and written communication • have demonstrated interpersonal skills in co-operation and teamwork, and leadership
Catalog Entry	This course provides an introduction to Information Management and concentrates on real-life complex case-studies in selected areas of Management of Information Systems. This includes e.g. framework for Information Management, ERP- and e-Business-Technology and Analysis of Internet-based businesses.
Class Size	Class participation is limited up to 25 students.
Content	• The key information technology and management issues as highlighted in an international study • Case study analysis of IS/IT in companies.
Workload	90 hours: 30 Contact hours and 60 hours preparation time
Miscellaneous	**Prerequisites:** There are no special pre-requisites for the course beyond basics in management and being interested in technological matters. Don't take the course if you expect to miss more than one class because attendance and active class participation is critical.

EEN6031 - Multimedia 1

ID	EEN6031
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM
Examination time	60 minutes
Language	German
category	Course
Discipline	Electrical Engineering
Pedagogical Approach	Lecture with discussion
Responsible:	Greiner, Thomas
Objectives	- Unterstanding the Technology of Multimedia Systems - Judgement of different solutions of Multimedia Systems
Catalog Entry	This course covers the technology of Multimedia Systems.
Content	- Aquisition of multimedia data, - Transfer of multimedia data, - Compression of data, - Processing and storage, - Output of multimedia data.
Workload	30h Presence, 30h Pre- and Post-Editing

EEN6032 - Multimedia 2

ID	EEN6032
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	English
category	Course
Discipline	Electrical Engineering
Pedagogical Approach	Lecture with discussion
Responsible:	Blankenbach, Karlheinz
Objectives	Basics of image parameters (contrast, color etc.) and technology of electronic multimedia displays
Catalog Entry	This course provides the basics of image parameters (contrast, color etc.) and the technology of electronic multimedia displays.
Content	- Basics: contrast, gray shades, color, - Influence of ambient light on image fidelity, - Multimedia technologies (LCD, CRT, Plasma, ...), - Interfacing, - Comparision of various technologies.
Workload	30h Presence, 30h Project, 30h Pre- and Post-Editing

HRM5015 - Human Resource Management

ID	HRM5015
Level	Advanced Level I
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK
Examination time	60 minutes
Language	German or English
category	Course
Discipline	Human Resource Management
Pedagogical Approach	Interactive approach
Key words	Human Resource Management human resources planning Change Management Strategy Organisational Development
Responsible:	Schwaab, Markus-Oliver
Objectives	The participants acquire knowledge about the basic principles of Human Resource Management and understand the approaches in an international context. The students are able to apply the principles of Human Resource Management to a given management situation, to work out case studies and to explain the application of an innovative personnel work in international project setups and globalised enterprise environment. Some deep dive discussion around corporate culture and its implications on moral and ethical behavioural constraints bridges into the more soft-fact- and experience-based learning design of the HRM lecture in the subsequent semester.
Catalog Entry	This course orients students towards the value chain of HR and

	the main operational aspects of HRM in organizations.
Content	- Basics of HR Management - HR Management as an Employee Champion and Administrative Expert (Overview) - HR Management as a Change Agent - HR Management as a Strategic Partner - Core Strategic Action Areas in HR Management - Strategic Staffing - Enablement, Motivation and Retention - Compensation - Core Structural Action Areas in HR Management - Organization - Institutional Environment - Corporate Culture(s), Moral and Ethics
Workload	30h Presence, 30h Project

LAW6021 - Laws in IT	
ID	LAW6021
Level	Advanced Level I
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP/PLH/PLR
Examination time	60 minutes
Language	German
category	Course
Discipline	Business Law
Pedagogical Approach	Interactive approach

Responsible:	Brönneke, Tobias
Objectives	This course aims at enabling the students to recognise the legally relevant implications of their future professional activities and thus to enhance professional efficiency.
Catalog Entry	This course provides an introduction into the legal aspects of information technology. That includes e. g. multimedia law, the conclusion of the contracts in e-commerce and data privacy laws.
Content	- introduction to jurisprudence, - special aspects of cyber law, - law of contracts, - contracts in e-commerce, - legal aspects of electronic signatures, - data protection law, - intellectual property and competition law (short survey).
Workload	30h Presence, 30h Pre- and Post-Editing
Miscellaneous	**Prerequisite:** A basic knowledge about law (eg. course "laws/engineers" or "laws/economics")

Semester 2

BIS6011 - Business Process Management	
ID	BIS6011
Level	Advanced Level II
Credits	4 Credits
Hours per week	4
Frequency	Once a Year

Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	English
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lab
Responsible:	Morelli, Frank
Objectives	The students are expected to: • Design business processes conceptionally • Create methodology-based business process models • Analyze and evaluate business processes • Optimize business processes • Implement business processes based on an ERP system
Catalog Entry	This course covers the fundamentals of business processes management (methodology-based design and optimization of business processes) as well as the implementation and integration of business process projects.
Content	• Principles of business process management (BPR, CPI, BPO, workflow management, ebusiness) • Business process design (extended event-driven process chains within the ARIS toolset) • Reference models for business process optimization (SAP, SCOR) • Customizing of organizational structures (SAP ECC 5.0) • Business process configuration (SAP ECC 5.0)
Workload	60h presence, 30h case study work, 30h pre- and post-editing
Miscellaneous	The course is divided into two halves (lecture and case study work). At the beginning of the case study work a short introduction into the SAP system is held and students are divided into several groups. Customizing activities are interactively coordinated with the lecturer within the

	scheduled course hours.
	Prerequisite: Foundations in business administration

BIS6012 - Advanced Software Engineering II	
ID	BIS6012
Level	Advanced Level II
Credits	6 Credits
Hours per week	4
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	45 minutes
Language	German
category	Course
Prerequisites	Business Systems Analysis, Design and Implementation Data Modelling and Database Systems Foundations in Programming
Discipline	Business Information Systems
Pedagogical Approach	Lecture with project
Key words	Java software engineering
Responsible:	Rau, Karl-Heinz
Objectives	By the end of the course students • know design objectives, • can detect shortcomings in existing code,

	• can apply basic methods of refactoring and selected design patterns, • can implement a well designed simple web-application with JAVA EE technologies, • can prepare a term paper for a current software engineering topic, • can make a presentation about a current software engineering topic.
Catalog Entry	The dominant topic of this course is software design. Starting with design objectives, we apply refactoring methods and design patterns to improve existing Java code. Based on a multi-tier-architecture we develop a web-application applying conventional techniques. Based on this we apply for the same application a current framework (e.g. Struts)
Content	• Overview • Use of Refactoring and Design-Patterns for the Domain Layer • Use of JPA for the Persistence Layer • Use of JSF for the Presentation Layer • Use for EJB for the Business Layer • Current Topics Elaborated in Term Papers and Presentations
Workload	60 contact hours, 120 hours for pre- and postpreparation, term paper, excercises and preparation for exam
Miscellaneous	For more details please check the current syllabus on the e-learning platform.

BIS6051 - IS Project	
ID	BIS6051
Level	Expert Level
Credits	6 Credits
Hours per week	4

Frequency	Every Semester
Kind of Examination	PLP
Language	German or English
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Project Course
Responsible:	Greiner, Thomas
Objectives	To realize a given target in cooperation with other fellow students in a given period of time. You should demonstrate your efficiency in professional knowledge, practical implementing, project management, team coordination and in soft skills.
Catalog Entry	Within the project the students work a arbitrary topic of the area of information systems (sometimes in cooperation with an enterprise).
Content	You could choose a topic in the domain of information systems (also in cooperation with companies).
Workload	180 h Project (incl. documentation)
Miscellaneous	Course procedure: Adviced project work (incl. documentation and presentation). **Requirements:** A solid knowledge from economics-, information- or engineer-studies.

EEN6033 - Human Machine Interface	
ID	EEN6033

Level	Expert Level
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	German
category	Course
Discipline	Electrical Engineering
Pedagogical Approach	Lecture with discussion
Responsible:	Felleisen, Michael
Catalog Entry	This course gives an overview about the historic development und the importance of Human-Machine-Interface/Human-Process-Communication by examples.
Content	- Why Human-Machine-Interface/Human-Process-Communication - Technology of machines and production – Process engineering - Technology of automation – Process control engineering - Information Technology - Summary
Workload	30h Presence, 30h Project

HRM6082 - Innovation Management	
ID	HRM6082

Level	Expert Level
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLH/PLR
Examination time	60 minutes
Language	English
category	Course
Discipline	Human Resource Management
Pedagogical Approach	Interactive approach
Responsible:	Janovsky, Jürgen
Objectives	The participants are expected to strengthen their professional competence in three areas: • Understand the current relevance of Innovation Management • Develop the capability for drafting technology strategies • Achieve the know-how for adjusting the organization to an innovation-benign climate
Catalog Entry	This course provides students with a strategy framework for managing innovations in business. It develops and applies models and analytical tools that clarify the interactions between competition, patterns of technological and market change, and the structure and development of internal firm capabilities. Major topics covered are characteristics of organisational structures favouring innovation, management of the market entry for innovations as well as alternatives for strategic technology management. Furthermore the innovation activities of different company groups are analysed.

Content	The class starts with an analysis of the overall relevance and the current challenges of Innovation Management. Later on, it will be focused on three main issues: • Alternatives for Strategic Technology Management • Characteristics of organisational structures favouring innovation • Management of the market entry for innovations Moreover, it will cover the following aspects: • Customer involvement in the innovation process • Options for reducing the product development time • Allocation of Venture Capital Besides a more theoretical review, the innovation activities of different company groups will be analysed. The class will start with an analysis of the overall relevance and the current challenges of Innovation Management. Later, it will be focused on three main issues: - Alternatives for Strategic Technology Management - Characteristics of organisational structures favouring innovation - Management of the market entry for innovations. Moreover, it will cover the following aspects: - Customer involvement in the innovation process - Options for reducing the product development time - Allocation of Venture Capital. Besides a more theoretical review, the innovation activities of different company groups will be analysed.
Workload	30h Presence, 30h Project, 30h Processing of case scenarios

Semester 3

THE6999 - Master Thesis

Electives (MIS) (WPF MIS)

BIS6082 - Global Information Technology 2

ID	BIS6082
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP/PLR
Examination time	60 minutes
Language	English and German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Interactive approach
Responsible:	Burkard, Werner
Objectives	Understanding the vocabulary and concepts of component based software development. Being able to understand and build distributed application systems, knowing about distribution mechanisms in the web. Getting a first insight to different middleware solutions
Catalog Entry	Objectives: Understanding the vocabulary and concepts of component based software development. Being able to understand and build distributed application systems, knowing about distribution mechanisms in the web. Getting a first insight to different middleware solutions Topics: • Fundamentals of distributed systems: charakteristics, communication models, scalability • Component oriented software development: modules and their interfaces • Component architectures at a glance • CORBA and the interface definition language IDL • Microsoft .NET: a survey • Fundamentals of ther TCP/IP – protocol suite • Distributing applications based upon TCP/IP protocols • Ressource

	distribution in the Web using Switching-technologies • Replication and Web-Caching • Actual topics, currently f. e. distributing and sharing knowledge using Web2 Forms of learning: Lecture, discussion, presentation of students papers
Content	- Fundamentals of distributed systems: charakteristics, communication models, scalability - Component oriented software development: modules and their interfaces - Component architectures at a glance - CORBA and the interface definition language IDL - Microsoft .NET: a survey - Fundamentals of ther TCP/IP – protocol suite - Distributing applications based upon TCP/IP protocols - Ressource distribution in the Web using Switching-technologies - Replication and Web-Caching - Actual topics, currently f. e. distributing and sharing knowledge using Web2
Workload	30h Presence, 30h Pre- and Post-Editing
Miscellaneous	**Prerequisite:** Up-to-date basic knowledge in IT (e.g. course Einf. Wirtschaftsinformatik) Knowledge of OO software development fundamentals

BIS6062 - Business Applications	
ID	BIS6062
Level	Advanced Level II
Credits	6 Credits
Hours per week	4
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	90 minutes

Language	German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lecture with project
Responsible:	Morelli, Frank; Porkert, Kurt
Objectives	The students are expected to: • Comprehend the software architecture of enterprise resource planning (ERP) systems • Design business intelligence (BI) applications conceptually • Implement an online analytical process (OLAP) solution • Adapt existing software solutions in use cases
Catalog Entry	This course focuses on the software architecture of enterprise resource planning (ERP) systems, business intelligence (BI), and online analytical process (OLAP) systems as well as their integration in management.
Content	• Components of ERP systems (illustrated by SAP's software) • Extension of ERP systems for CRM, SRM, SCM, PLM and ME • Adaptation of ERP system components to differentiate processes of order management • Classical computer-based analysis and planning systems within a company (query and report systems, AI, DSS, EIS) • Data warehouses and data marts • OLAP systems: Foundations, architecture, and implementation (MS Analysis Services) • Data mining / knowledge discovery in databases (Delta Master)
Workload	60h Presence, 60h pre- and post-editing, 30h project work
Miscellaneous	**Prerequisite:** • Fundamentals of business informatics: The students know several kinds of company information systems, are able to describe them and know how and for what

	purpose they can be used in a company.
	• Fundamentals of business administration: The students understand fundamental business contexts, important goals of a company and the main steps to pursuit them. They know the basic structure of a company and the interrelation of different parts of a company. They have a basic understanding of the tasks and economic problems in different economical functions. In addition they know about the importance of a customer orientation and that the whole company should be a value-added process focused on the customers. The students understand fundamental problems of managing daily business and are able to analyze, define criteria for a decision and to find an approach for solving problems.

BAE6092 - Computer Graphics

ID	BAE6092
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Every Semester
Kind of Examination	PLK/PLM/PLP/PLH/PLR
Examination time	60 minutes
Language	German
category	Course
Discipline	Business Administration and Engineering
Pedagogical Approach	Lectures with lab exercises
Responsible:	Mazura, Andreas

Objectives	This course provides an introduction in the area of Computer Graphics.
Catalog Entry	This course provides an introduction in the area of Computer Graphics.
Workload	30h Presence, 20h Pre- and Post-Editing; 10h Presentation

SIC6061 - Cross Cultural Management	
ID	SIC6061
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP/PLH/PLR
Examination time	60 minutes
Language	English
category	Course
Discipline	International Business
Pedagogical Approach	Interactive approach
Responsible:	Voß, Timm; Fournier, Guy
Objectives	Developing the capability to recognize and understand intercultural conflict potentials in international negotiations, multicultural teams, international human resource management and corporate organization, as well as international communication, thus learning to possibly avoid

	and solve these conflicts.
Catalog Entry	Participants will acquire knowledge on major theoretical approaches to managing across cultures as well as a variety of concrete examples. The course covers communication models, concepts of culture by Geert Hofstede, Richard Gesteland, and Fons Trompenaars as well as crosscultural differences (physical, perceptual, motivational, experiential, emotional, linguistic, verbal or nonverbal). Country examples and the multinational student group round this course out.
Content	**Overview:** • Concepts facilitating recognition, understanding and systematizing of intercultural differences • The role of stereotypes/clichés/prejudices • Cross-cultural communication • The impact of cross-cultural differences on organization, negotiation, management, marketing, a.s.o. • Problems of expatriation 1. Introduction Topicality of subject: internationalisation, globalisation, standardisation, glocalisation, mergers, acquisitions, problems of expatriation definitions, esp. of "culture", business (corporate) cultures vs. national and individual cultures problems of clichés and stereotypes aims of seminar 2. Criteria (concepts) of cross-cultural differences Case-Study: The MCC-case (from Trompenaars) 3. Enterprise models, organisation structure and management principles 4. Application on France and Germany: Consequences for negotiation, marketing and selection of expatriates (the JPB-structogram) 5. Case studies (esp. Eurodisney and Pebble Beach) 6. Cross-cultural marketing
Workload	30h Presence, 30h Processing of case scenarios and Pre- and Post-Editing
Miscellaneous	**Prerequisite:** basic knowledge in business administration

BAE6061 - Customer Relationship Management

ID	BAE6061
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lecture
Responsible:	Bulander, Rebecca

MEN6092 - Developement Process of Mechatronic Products

ID	MEN6092
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year

Kind of Examination	PLK/PLM/PLP/PLH/PLR
Examination time	60 minutes
Language	German
category	Course
Discipline	Mechanical Engineering
Pedagogical Approach	Lectures with lab exercises
Responsible:	Wrede, Jürgen
Objectives	Understanding function and software engineering for automotive control systems
Catalog Entry	This course covers teh function and software engineering for automotive control systems.
Content	- Introduction and examples of automotive control systems, special requirements - Modern software and function development process with simulation, rapid prototyping, automatic code generation, hardware-in-the-loop, virtual car testing - Development tools such as MATLAB/Simulink, ASCET-SD, dSpace, CANoe, CarMaker - Hands-on exercises in PC-pool and with experiment vehicle electro-Go-kart
Workload	30h Presence, 30h Pre- and Post-Editing
Miscellaneous	**Requirements:** Basic knowledge of computer science, measurement and control techniques Basic knowledge of MATLAB

BIS6071 - Development of Multimedia Applications 1

ID	BIS6071

Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLP
Examination time	45 minutes
Language	English
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lecture
Responsible:	Thesmann, Stephan
Objectives	Enabling students to design multimedia apps using appropriate methods and tools.
Catalog Entry	This course provides the basics of the design of multimedia applications in business.
Content	- fields of application in business with examples - hardware and software technology - software development model for multimedia applications, part 1 (methodology, methods, tools, examples, and practices for the design process, e. g. topic trees, story boards, interaction diagrams, and screen design)
Workload	30h Presence, 10h Pre- and Post-Editing, 20h project work
Miscellaneous	**Prerequisites:** Up-to-date basic knowledge in IT (e.g. course Einführung Wirtschaftsinformatik), HTML fundamentals

	This course is combined with Development of Multimedia Applications 2

BIS6072 - Development of Multimedia Applications 2	
ID	BIS6072
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLP
Examination time	45 minutes
Language	English
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lecture with project
Responsible:	Thesmann, Stephan
Objectives	Enabling students to realize multimedia apps using appropriate methods and tools
Catalog Entry	This course is based on "Development of Multimedia applications I". It consists of a lecture, methodic practices and realization of a project.
Content	- fields of application in business with examples - hardware and software technology - software development model for multimedia applications, part 2 (methodology, methods, tools,

	examples, and practices for the realization process, e.g. asset production, authoring, tests, and mastering)
Workload	30h Presence, 10h Pre- and Post-Editing, 50h project work
Miscellaneous	**Prerequisites:** Up-to-date basic knowledge in IT (e.g. course Einführung Wirtschaftsinformatik), HTML fundamentals This course is combined with Development of Multimedia Applications 1

EEN6041 - Digital Mobile Communication Systems 2	
ID	EEN6041
Level	Expert Level
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM
Examination time	60 minutes
Language	German or English
category	Course
Discipline	Electrical Engineering
Pedagogical Approach	Lecture
Responsible:	Niemann, Frank
Objectives	●

Catalog Entry	This course covers the fundamentals of current digital mobile radio systems.
Content	
Workload	30h Presence, 30h Pre- and Post-Editing

BAE6082 - eCollaboration Systems

ID	BAE6082
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	German or English
category	Course
Discipline	Computer Engineering
Pedagogical Approach	Interactive approach
Responsible:	Thimm, Heiko

BAE6062 - Enterprise Architecture Management

ID	BAE6062

Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lecture with project
Responsible:	Bulander, Rebecca

BIS6061 - Enterprise Content Management Systems	
ID	BIS6061
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes

Language	German
category	Course
Discipline	Business Law
Pedagogical Approach	Lecture with project
Responsible:	Porkert, Kurt
Objectives	Related to a comprehensive management of business documents lifecycles in different kinds of enterprises, the students obtain the ability to: • Analyze improvements and benefits are achievable • Design solutions to capture, to store, to preserve, to find, to deliver and to secure information • Choose software or services to implement the designed solutions • Describe suitable approaches to deploy and to apply the designed solutions
Catalog Entry	This course covers the life cycle management of structured and unstructured documents and the selection of qualified software for all life cycles.
Content	• Activities in lifecycles of inbound information, internally created information and outbound Information which can be a matter of improvement • Scope of benefits related to different kinds of information and of business processes • Concept and components of Enterprise Content Management (ECM) • Kinds of software, components and functionalities for Input Management, for Output Management, for Archiving, for Document Management, for Messaging, for Workflow Management und for a Single Point of Access • Advantages and examples of ECM software suites • Models of improvements in lifecycles of inbound information, of internally created information and of outbound information • Models of improved solutions for storing, preserving and finding of business information • Classification of offered ECM software and offered ECM services • Approaches and aspects to choose ECM software and

	ECM services • Stages of ECM adoption • Management of ECM projects
Workload	30 h presence + 30 h pre- and post-editing or 60 h project work
Miscellaneous	**Prerequisite:** Information systems (solid knowledge)

BAE5072 - Financial Management and Control I	
ID	BAE5072
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK
Examination time	60 minutes
Language	English
category	Course
Discipline	Business Administration and Engineering
Pedagogical Approach	Lecture
Key words	Finance Financial Statement Investor Relations Corporate Taxes
Responsible:	Weiblen, Martin
Objectives	Advanced knowledge in financial controlling and basic

	knowledge in corporate management and investor relations
Catalog Entry	This course provides advanced knowledge in Finance.
Class Size	Approximately 15 students
Content	Main subject areas (will be constantly updated): 1. What is FM & C? - Traditional and modern views - Financial reports, ratios and instruments - Relation between financial and strategic management/ business policy 2. Basics - Content and structure of financial reports - Accounting theories and philosophies - Accounting and reporting standards - Newer German and international financial requirements - External/internal auditor / controller - Accounting – International development of functions 3. Taxation in Germany (basics) - Overview on German taxation - Value-added tax / corporation tax / trade tax / commercial tax / cost and other taxes - Law governing the taxation of international transactions - Tax policies of a corporation - Business decisions after tax 4. Managing and control of integrated financials - Presentation of the financials of a company – internal/external view - Balance sheet policy - Analysis and review of financial statements and related financial information - Optimization of cash position - Group vs. legal entity optimization 5. Investor Relations - Internal vs. external view - Presentation of the company to the financial markets - Basel II and other requirements of financial market regulations

Relationship with other courses	Controlling/Business Administration II in the engineering Bachelor study programs or related lectures from other study programs; FM&C II; CF
Usability in other courses	Can be selected as an option as long as the student has basic knowledge of business management

BAE5073 - Financial Management and Control II	
ID	BAE5073
Level	Expert Level
Credits	3 Credits
Hours per week	2
Frequency	Every Semester
Kind of Examination	PLK/PLH/PLR
Examination time	60 minutes
Language	English
category	Course
Discipline	Business Administration and Engineering
Pedagogical Approach	Interactive approach
Key words	Case studies operational control aspecta strategic Financial Management global finance management
Responsible:	Weiblen, Martin
Objectives	The lecture (in seminar form through presentations, case studies and discussions) deals with the instruments of today's corporate financial management and control in a global context. The focus of modern financial management and

	control is on achieving an acceptable return from the money invested in order to increase company value.
Catalog Entry	Seminar on operative and strategic subjects out of Finance and Management in an international context.
Class Size	Approximately 15 students
Content	Seminar on operative and strategic subjects out of Finance and Management in an international context: • Financial Management and Control – a major element of a global strategic management approach (e.g. financial market expectations, finance philoso-phies, MbO, finance manager personality) • Global Financial Management (German and international financial account-ing, Cash flow and Ratio analyses, Shareholder Value/EVA, financial restruc-turing, treasury instruments, international profit allocation and transfer pric-ing, gross border financing, Corporate Governance) • Strategic Control Aspects (strategic planning cycle, evaluation of projects and strategies, Capital Budgeting, global resources allocation, balanced scorecard, experience curve/life cycle analysis, target costing) • Operational Control (global budgeting and reporting, consolidated Management Accounts, project control, risk control, overhead cost control, financial management information systems/data warehouses) • Case Study: R&D project (decision under risk)
Workload	30h Presence, 30h Pre- and Post-Editing
Miscellaneous	**Prerequisites:** The course assumes a fair knowledge in all above fields and will center around discussions of the modern finance instruments. Should time and knowledge of the students allow, case studies (in groups) will be offered, e.g.: R & D-decision under risk, international tax planning, preparation of annual budgets. **Grading:** Should a grade be requested, this will be based on the student's presentation in class on a pre-agreed finance subject, including a prior hand-out to all participants (50 %), a written paper on that subject (20 %) and the student's active participation in class (30 %). A minimum

attendance is required.

Content:
I. Financial Management and Control
a major element of a global strategic management approach
Financial Markets expectations and their impact on companies
Strategic Management philosophy
Management by Objectives (MbO)
Controller and Finance Manager personality
Strategic and operational Control

II. Global Financial Management
Shareholder Value / EVA (Economic Value Added): Value based Management
German and international financial accounting (IAS and US GAAP)
Consolidated accounts: Balance sheet, P/L- and Cash Flow analysis (incl. Ratio analysis)
International profit allocation and transfer pricing issues
International tax planning
Financial restructuring within an international context
Financing instruments and gross border financing
Hedging and import/export financing
Corporate Governance

III. Strategic Control Aspects
Strategic Planning Cycle
Evaluation of Strategies *) *) to be considered:
Project appraisal/Valuation of Capital budgeting *) NPV vs. Accounting: Time value of money
International Allocation of Ressources DCF techniques: Calculation period, Dis-Balanced Scorecard count factor, residual value
Experience Curve / Life Cycle analysis Milestones, Sensitivity analysis
Target costing

IV. Operational Control Aspects
Global Budgeting and Reporting
Consolidated Management accounts: Global Product Profitability
Project Control
Risk Control
Financial Management Information Systems / Data Warehouse approaches
- Presentation by an outside expert; if available -
Overhead Cost Control (Activity based costing, Overhead cost analysis, Zero-Base-Budgeting, Cost Benchmarking,

	Shared Services Approach
	V. Case Study: R & D-Project evaluation (decision under risk) - should subject be chosen
	Student´s Presentations Students are invited to present for maximum 40 minutes a certain subject (or more) for discussion in class. Students can work out a presentation on their own or in groups of up to three and do the presentation together. They have to distribute a handout of their presentation one week before the presentation day to all participants of the course. At the same time a 10 page summary paper has to be provided to the Professor. Alternatively to a presentation with a summary paper a group of up to three students may want to explain an economic project evaluation on the basis of a Case Study: R&D project evaluation. Subjects for the presentation (incl. summary paper) may be chosen either out of the list on page 1 or the list below, but can also be agreed individually.

BIS6081 - Global Information Technology 1

ID	BIS6081
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP/PLR
Examination time	60 minutes
Language	English
category	Course
Discipline	Business Information Systems

Pedagogical Approach	Interactive approach
Responsible:	Schuler, Joachim
Objectives	Enabling students to realize internet technologies and understand the principals of building e-business-solutions.
Catalog Entry	This course covers internet technologies and the principals of building e-business-solutions.
Content	- classification of e-business - state-of-the art internet-technologies - contentmanagement - collaboration, communities - shoppingsystems, - marketplaces, e-procurement - Planning of webbased e-business solutions - Case Studies and Excercises
Workload	30h Presence, 30h project work

CEN6053 - Industrial Data Communications	
ID	CEN6053
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM
Examination time	60 minutes
Language	German
category	Course

Discipline	Computer Engineering
Pedagogical Approach	Lectures with lab exercises
Responsible:	Thuselt, Frank
Objectives	In the last years there is a decentralisation trend in the automation. Distributed controls and their integration with intelligent sensors and actuators are very important. The industrial communication systems in this domain are field busses. Actually, Europe and particularly Germany have a leading position in that field; as well in the development from this systems as by the application. In the course, a systematic view on field bus technology is given. The actual used systems, particularly Profibus, CAN, AS-Interface and Industrial Ethernet are presented in details. So you can evaluate professional an occupational aptitude. The acquired knowledge is confirmed with exercises.
Catalog Entry	In this course a systematic view on field bus technology is given.
Content	- A systematic view on field bus technology is given - The OSI-Communication-Model - Physical transmission characteristics - Communication processes, access control, error detection, transport frame, services, token management, technique of distributed database - Application-oriented features. The upper OSI layer. - Data formats, protocols, services, communication relations, objects. - Application interface - Profiles and function blocks - Diagnostic and application tools
Workload	30h Presence, 30h Pre- and Post-Editing

IBU5041 - International Management

ID	IBU5041
Level	Advanced Level II

Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP/PLH/PLR
Examination time	60 minutes
Language	English
category	Course
Discipline	International Business
Pedagogical Approach	Interactive approach
Responsible:	Fournier, Guy; Janovsky, Jürgen
Objectives	The participants are expected to improve their competencies in the following fields: • How to develop a consistent strategy for internationalisation • How to penetrate foreign markets • How to adjust the organisational structure to the requirements of international business • Where to see the main differences between American, Japanese and German Management
Catalog Entry	This course focuses on the positioning of enterprises in the international business. That includes the processes to enlarge the international business activities, the strategies of internationalization, design of the organizational structure, special instruments and the characteristics of the different national management systems.
Content	Tools for the positioning of a company in the arena of international competition represent the main focus of this seminar. In this context, we will highlight both strategic options and operational issues related to the market entry. Besides a more theoretical review, the international activities of different

	company groups will be analysed. Moreover, the class will provide a rough comparative analysis of different management-systems in the US, Japan and Germany.
Workload	30h Presence, 30h Project, 30h Processing of case scenarios
Miscellaneous	**Course procedure**: The form of the class and its assignment will depend on the number of participants: - Up to 25 participants: seminar + oral presentation - More than 25 participants: lecture + written exam

BIS6063 - IT Organization	
ID	BIS6063
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Lab
Responsible:	Morelli, Frank
Objectives	The students are expected to:

	• Recognize strategic and organizational issues in the IT field • Design the IT department of a company conceptionally • Analyze IT coordination forms
Catalog Entry	This course focuses on the organization of the IT-Department of an enterprise.
Content	• Empiric results of IT management surveys • Strategic IT management configuration (IT governance, IT compliance, IT balanced scorecard) • Scope for a hierarchic design of the IT area (center concepts, shared services, outsourcing and offshoring) • IT Processes within the ITIL framework
Workload	30h presence, 30h pre- and post-editing
Miscellaneous	**Prerequisite:** Foundations in business administration

CEN5012 - Model Driven Software Engineering	
ID	CEN5012
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Language	German
category	Course
Discipline	Computer Engineering
Pedagogical Approach	Interactive approach

Responsible:	Greiner, Thomas

EEN6042 - Optical Communication Systems

ID	EEN6042
Level	Expert Level
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM
Examination time	60 minutes
Language	German or English
category	Course
Discipline	Electrical Engineering
Pedagogical Approach	Lecture
Responsible:	Mohr, Friedemann
Catalog Entry	This course provides basics and advanced knowledge about Optical Communications Systems.
Content	- Introduction to Optical Communication Systems - The Optical Communications Channel (Optical fibre, attenuation, dispersion) - Optical Sources and Optical Transmitters (Physics, LED´s, laser diodes) - Optical Detectors and Optical Receivers (Physics, pin diodes, APD´s, noise and detection sensitivity) - Optical Communication Systems

	(Classical point-to-point link, modern developments)
Workload	30h Presence, 30h Pre- and Post-Editing

BIS6101 - Software Engineering Project

ID	BIS6101
Level	Expert Level
Credits	9 Credits
Frequency	Once a Year
Kind of Examination	PLP
Language	German
category	Course
Discipline	Business Information Systems
Pedagogical Approach	Project Course

CEN5011 - Software for Embedded Systems

ID	CEN5011
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Language	German

category	Course
Discipline	Computer Engineering
Pedagogical Approach	Interactive approach

GMT5012 - Strategic Management	
ID	GMT5012
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLR/PLM
Examination time	60 minutes
Language	German
category	Course
Discipline	International Business
Pedagogical Approach	Interactive approach
Responsible:	Terporten, Michael
Catalog Entry	Participants will understand and apply the options and models of strategic management Major topics are the role of strategic management, basic concepts in strategic thinking, strategic options and methods of implementing them, the role of benchmarking in the strategy process, evaluating the strategic position.

MEN6091 - Systems Engineering

ID	MEN6091
Level	Advanced Level II
Credits	3 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP/PLH/PLR
Examination time	60 minutes
Language	German
category	Course
Discipline	Mechanical Engineering
Pedagogical Approach	Lectures with lab exercises
Responsible:	Weber, Hanno
Objectives	Qualifying students in systems thinking, product modelling, and in administrating and using PDM – systems.
Catalog Entry	This course covers the topic product modeling and the administration and utilization of PDM systems.
Content	- systems approach to product development - aspects of collaborative product commerce - object oriented modelling of products and processes - systems engineering methodology - introduction to PDM-systems - practical exercise with the PDM-system EIGNER-PLM
Workload	30h Presence, 30h Pre- and Post-Editing

Miscellaneous	**Prerequisite:** Basic knowledge about processes, methodologies, documents, and organization in the field of engineering. Basic knowledge about data modelling.

BAE6081 - Technologies of database systems	
ID	BAE6081
Level	Advanced Level II
Credits	2 Credits
Hours per week	2
Frequency	Once a Year
Kind of Examination	PLK/PLM/PLP
Examination time	60 minutes
Language	German or English
category	Course
Discipline	Computer Engineering
Pedagogical Approach	Interactive approach
Responsible:	Thimm, Heiko