

# Module Catalogue

»International Information Systems«

Bachelor

SPO 2021



**Hochschule  
Augsburg** University of  
Applied Sciences

Fakultät für  
Informatik

**Last updated: July 5, 2022**

The following text is a commentary in English language on the module manual of Augsburg University of Applied Sciences, helping you to understand the contents of the German document. The legally binding text remains the German version of the module manual. Please refer to the German text if possible or seek advice in case of uncertainties.

The purpose of the module descriptions is to provide a content-related overview of your degree course. Only the current version of the university catalogue and examination regulations shall be deemed legally binding.

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# 1 International Information Systems Bachelor - 1. Semester

## 1.1 1st Foreign Language

Title	1. Fremdsprache
Title in English	1st Foreign Language
Examination number	9770010
Module code	FL1
Modul area	Programming
Module coordinator	Prof. Dr. Svea Schaufler
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Liberal Arts and Sciences
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	1st Foreign Language (4 Credit hours)
Teaching language	The module is usually taught in English.
Content of the module	The course is a combination of teacher input, independent self study, and language teaching based on a communicative methodology which includes the interaction of all participants. Groups usually comprise 20-25 participants.
Qualification aims for the module learning objectives/skills	The aim of this mandatory language course is for participants to use English confidently as part of their studies but also in the workplace. This is achieved using an interactive and application-based methodology for language teaching. The focus is on useful skills such as text comprehension, technical vocabulary, written correspondence, oral communication, presenting, and negotiating in English.
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Portfolio exam: <ul style="list-style-type: none"><li>• Presentation, 5-20 minutes, 20%</li><li>• Oral examination, 10-20 minutes, 20%</li><li>• Written examination, 90 minutes, none auxiliaries, 60%</li></ul>
Reading list	Will be provided in class.

## 1.2 Mathematics 1

Title	Mathematik 1
Title in English	Mathematics 1
Examination number	9770020
Module code	MAT1
Modul area	Mathematics
Module coordinator	Prof. Dr. Caroline Justen
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Liberal Arts and Sciences
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	Mathematics 1 (4 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<ul style="list-style-type: none"> <li>• Propositional logic</li> <li>• Infinite sequences and series</li> <li>• Real-valued functions</li> <li>• Financial mathematics</li> <li>• Derivatives</li> <li>• Complex numbers</li> </ul>
Qualification aims for the module learning objectives/skills	<p>Students passing the course successfully will be able to:</p> <ul style="list-style-type: none"> <li>• develop new mathematical knowledge from calculus and linear algebra which are not part of the mathematics 2 modul: <ul style="list-style-type: none"> <li>– understanding problems in mathematical language</li> <li>– solving mathematical problems of low and medium complexity</li> <li>– transferring mathematical knowledge taught in the course to new simple problems</li> </ul> </li> <li>• train logical reasoning</li> <li>• model simple practical problems in mathematical language</li> <li>• use mathematical textbooks to extend the mathematical topics of the lectures</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	The topics are relevant for the mathematics 2 module
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Written examination, 60 minutes, auxiliaries: 2 DIN A4 pages handwritten formulary; a calculator that can't calculate 70! (70 Faculty)

Reading list	<p><b>Arens; Hettlich; Karpfinger; Kockelkorn; Lichtenegger; Stachel:</b> Mathematik, Spektrum Akademischer Verlag, 4. Auflage. (2018)</p> <p><b>Opitz, O.; Etschberger, S.; Burkart, W.R.; Klein R. :</b> Mathematik, Lehrbuch für das Studium der Wirtschaftswissenschaften, De Gruyter Studium, Oldenbourg, 12. Auflage. (2017)</p>
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### 1.3 Programming 1

Title	Programmieren 1
Title in English	Programming 1
Examination number	9770030
Module code	PRG1
Modul area	Programming
Module coordinator	Prof. Dr. Jens Lauterbach
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	Programming 1 (4 Credit hours) Practical work Programming 1 (2 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<p>This lecture introduces students to the core concepts of programming based on the programming language JAVA. JAVA is one of the important languages of our time and it is widely used in business. The focus of the lecture lies on the concepts and methods of programming. These concepts and methods will be introduced and explained with examples in JAVA.</p> <p>The first part of the lecture provides the context with key terminology of business informatics and software engineering. It then introduces to the fundamentals of programming with basic JAVA language elements, simple data types, variables, expressions and operators. Then control structures, complex data types and methods will be introduced.</p> <p>The second part of the lecture provides an introduction to object-orientation and its application in JAVA.</p> <p>The lecture will provide the concepts and methods that will then be practiced in hands-on exercises with a state-of-the art integrated development environment (IDE, e. g., Eclipse). Students will develop and implement algorithms in JAVA and will be evaluated based on their ability to apply the knowledge from the lecture in practice.</p>
Qualification aims for the module learning objectives/skills	<p>Students will get an introduction to the core concepts of programming using JAVA. After successful participation, students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand and describe key elements of the programming language JAVA</li> <li>• Know the key concepts of OO programming languages</li> <li>• Understand JAVA source code of low to medium complexity</li> <li>• Independently implement algorithms in JAVA</li> <li>• Independently develop own algorithms</li> <li>• Quickly familiarize themselves with other programming languages</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None

Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 6, ECTS credits: 8, Contact hours: 90h, Independent study: 150h, Total workload: 240h
Type of examination / required course achievements	Written examination, 60 minutes, auxiliaries: authorized lecture notes
Requirements for participation	Practical work Programming 1
Reading list	Literature recommendations will be provided in the lecture.

## 1.4 Introduction to Business Administration, Financial Accounting

Title	Grundlagen der BWL, Buchführung und Bilanzierung
Title in English	Introduction to Business Administration, Financial Accounting
Examination number	9770040
Module code	IBA
Module coordinator	Prof. Dr. Stephan Zimmermann
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	Introduction to Business Administration, Financial Accounting (6 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<p>Business Administration:</p> <ul style="list-style-type: none"> <li>• Fundamentals of economics</li> <li>• Scientific approach of business administration</li> <li>• Entrepreneurship and constitutive management decisions (business model, choice of legal form and location, corporate constitution)</li> <li>• Value Chain (marketing and sales, production, materials management)</li> <li>• Organization and human resources management</li> <li>• Operational taxes</li> </ul> <p>Financial accounting:</p> <ul style="list-style-type: none"> <li>• Terms and rules of external accounting</li> <li>• Technique of double-entry bookkeeping</li> <li>• Balance sheet: structure, content, transactions</li> <li>• Profit and loss account: structure, content, business transactions</li> <li>• Basics of balance sheet analysis</li> </ul>
Qualification aims for the module learning objectives/skills	<p>Upon successful completion of the module, students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand elementary theories of economics</li> <li>• Recognize challenges, tasks and methods of business administration</li> <li>• Explain constitutive decisions of companies</li> <li>• Outline basic value chain and leadership processes in a company</li> <li>• Explain the tasks and rules of financial accounting</li> <li>• Apply the system of double-entry bookkeeping.</li> </ul>



Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 6, ECTS credits: 8, Contact hours: 90h, Independent study: 150h, Total workload: 240h
Type of examination / required course achievements	Written examination, 90 minutes, auxiliary: calculator
Reading list	<p><b>Business Administration:</b></p> <p><b>Thommen, Jean-Paul; Grösser, Stefan (2014):</b> Economy, Company, Management. Introduction to Business Administration. Zürich</p> <p><b>Eichhorn, Peter; Towers, Ian (2018):</b> Principles of Management. Efficiency and Effectiveness in the Private and Public Sector. Cham: Springer International Publishing</p> <p><b>Kolmar, Martin (2017):</b> Principles of Microeconomics. An Integrative Approach. Cham: Springer International Publishing</p> <p><b>Pride, William M.; Hughes, Robert J.; Kapoor, Jack R. (2019):</b> Foundations of business. 6E. Boston: Cengage.</p> <p><b>Mazzarol, Tim (2020):</b> Entrepreneurship and Innovation. Fourth edition. Singapore: Springer (Springer Texts in Business and Economics).</p> <p><b>Financial Accounting:</b></p> <p><b>Nothhelfer, Robert:</b> Financial Accounting. Introduction to German GAAP with exercises (2017). München, Wien: De Gruyter Oldenbourg (De Gruyter Textbook).</p> <p><b>Epstein, Lita; Tracy, John A. (2015):</b> Bookkeeping all-in-one for dummies. Hoboken, NJ: John Wiley &amp; Sons (For dummies). 2nd Edition</p>

## 1.5 2nd Foreign Language 1 of 4

Title	2. Fremdsprache 1 von 4
Title in English	2nd Foreign Language 1 of 4
Examination number	9771098- 9771504
Module code	II2.FS
Modul area	Foreign Language
Module coordinator	Lecturers at the Faculty of Liberal Arts and Sciences
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Liberal Arts and Sciences
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	2nd Foreign Language 1 of 4 (4 Credit hours)
Teaching language	The module is taught in German for non-native students. Depending on the selection, the module will be taught in Spanish, French, Italian or Chinese language
Content of the module	The course is a combination of linguistic input by the teacher, independent self-study and communicative and application-oriented language teaching, in which all participants are involved. The course takes place in groups of 20-25 participants.
Qualification aims for the module learning objectives/skills	The aim of this compulsory course is to enable students to use the (technical) language in studies and in the professional environment.
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Portfolio exam: Oral and written parts according to the module specifications of the chosen language of the faculty of Liberal Arts and Sciences
Reading list	Die Literatur wird im Seminar bekannt gegeben.

## 2 International Information Systems Bachelor - 2. Semester

### 2.1 Database Systems

Title	Datenbanksysteme
Title in English	Database Systems
Examination number	9770050
Module code	DBS
Module coordinator	Prof. Matthias Kolonko, Ph.D. (ONPU)
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, summer semester
Courses that make up the module	Database Systems (4 Credit hours) Practical work Database Systems (2 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<p>Basics of database systems.</p> <p>The course puts a strong focus on semantic data modeling and the system-independent database design and addresses the theory of normal forms into more depth. The architecture of a database management system (RDBMS) and apt physical data structures are illustrated by means of the RDBMS "ORACLE".</p> <p>An Oracle database will be provided for SQL exercises. During the practical training, the design and realization of a database is requested from the students and the extension to a SQL based information system.</p>
Qualification aims for the module learning objectives/skills	<p>After the course, participants shall be able to</p> <ul style="list-style-type: none"> <li>• understand basic knowledge about the architecture and functionality of database systems.</li> <li>• perform analysis and data modeling (both conceptual and logical database design).</li> <li>• perform an analysis of a logical data model with regard to the theory of normal forms.</li> <li>• implement and program data structures using SQL</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 6, ECTS credits: 8, Contact hours: 90h, Independent study: 150h, Total workload: 240h

Type of examination / required course achievements	<p>Written examination, 90 minutes,</p> <p>As an alternative to the written exam, 3 interim tests can be handed in that will be summarized as one final grade.</p> <p>After having chosen to hand in the 3 interim tests, it is not possible to switch back to the written exam at the end of the semester.</p>
Requirements for participation	Practical work Database Systems
Weighting of individual performance in the final grade	Written exam (100%) or 3 interim tests (each with the same weighting)
Reading list	<ul style="list-style-type: none"> <li>• Information concerning the course, Oracle und current issues can be found here: <a href="https://ohs.informatik.hs-augsburg.de:4443/web/bine">https://ohs.informatik.hs-augsburg.de:4443/web/bine</a></li> <li>• R. Elmasri, S.B. Navathe: Fundamentals of Database Systems</li> </ul>

## 2.2 2nd Foreign Language 2 of 4

Title	2. Fremdsprache 2 von 4
Title in English	2nd Foreign Language 2 of 4
Examination number	9771098- 9771504
Module code	II2.FS
Modul area	Foreign Language
Module coordinator	Lecturers at the Faculty of Liberal Arts and Sciences
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Liberal Arts and Sciences
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, summer semester
Courses that make up the module	2nd Foreign Language 2 of 4 (4 Credit hours)
Teaching language	The module is taught in German for non-native students. Depending on the selection, the module will be taught in Spanish, French, Italian or Chinese language
Content of the module	The course is a combination of linguistic input by the teacher, independent self-study and communicative and application-oriented language teaching, in which all participants are involved. The course takes place in groups of 20-25 participants.
Qualification aims for the module learning objectives/skills	The aim of this compulsory course is to enable students to use the (technical) language in studies and in the professional environment.
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	The module 2nd Foreign Language 2 of 4 builds on the 2nd Foreign Language 1 from 4 and is assumed. (recommended)
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Portfolio exam: Oral and written parts according to the module specifications of the chosen language of the faculty of Liberal Arts and Sciences
Reading list	Die Literatur wird im Seminar bekannt gegeben.

## 2.3 Introduction to Information Systems

Title	Grundlagen der Wirtschaftsinformatik
Title in English	Introduction to Information Systems
Examination number	9770060
Module code	ISY
Module coordinator	Prof. Dr. Arne Mayer
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, summer semester
Courses that make up the module	Introduction to Information Systems (3 Credit hours) Practical work Introduction to Information Systems (1 Credit hour)
Teaching language	The module is taught in English.
Content of the module	<ul style="list-style-type: none"> <li>• Basics and definitions of information systems</li> <li>• Business Process Management and Modelling</li> <li>• Integrated Information Systems and Application systems</li> <li>• Information Management</li> <li>• Case studies of complex integrated business processes and information systems</li> </ul>
Qualification aims for the module learning objectives/skills	<p>After successful participation in the module, students will be able to:</p> <ul style="list-style-type: none"> <li>• describe the subject areas assigned to information systems. They will be able to explain principles of information systems and its distinction from business administration and computer science.</li> <li>• Master basic terms, methods, concepts and applications of business information processing and integrated systems.</li> <li>• Understand horizontal and vertical integration concepts and their implementation.</li> <li>• Grasp enterprise information requirements.</li> <li>• Model business requirements as fundament for information system implementation</li> <li>• Understand the tasks and challenges of information management</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h

Type of examination / required course achievements	Written examination, 60 minutes, none auxiliaries
Requirements for participation	Practical work Introduction to Information Systems
Reading list	

## 2.4 Programming 2 & Software Engineering

Title	Programmieren 2 & Software Engineering
Title in English	Programming 2 & Software Engineering
Examination number	9770070
Module code	PRG2
Modul area	Programming
Module coordinator	Prof. Dr. Jens Lauterbach
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, summer semester
Courses that make up the module	Programming 2 & Software Engineering (4 Credit hours) Practical work Programming 2 & Software Engineering (2 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<p>In this lecture, based on foundations of the lecture Programming 1, further concepts and constructs of modern programming languages are taught using JAVA. The module deals with the following content:</p> <ul style="list-style-type: none"> <li>• Repetition and deepening of the foundations and understanding of object-oriented programming</li> <li>• Introduction of other important concepts, such as e. g. helper classes for working with JAVA</li> <li>• Introduction and deepening of input/output concepts such as streams and parallel programming with threads</li> <li>• Introduction to distributed applications</li> <li>• Introduction to functional programming</li> </ul> <p>Larger and more complex software systems are usually developed in teams using a methodical approach. The module introduces to Software Engineering that lays the foundation with concepts, and methods for developing larger software systems.</p>
Qualification aims for the module learning objectives/skills	<p>Qualification aims for the module learning objectives/skills After successful participation in the module, students are able to:</p> <ul style="list-style-type: none"> <li>• Describe basic knowledge of programming including the concepts of object-oriented programming</li> <li>• Grasp requirements and tasks, to abstract them and to solve them using programming language tools</li> <li>• Familiarize themselves with further concepts or other programming languages</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	Module Programming 1 (recommended)
Possibility to use module within student's own study programme or other programmes	International Information Systems



Total workload and its constituent parts	Credit hours: 6, ECTS credits: 8, Contact hours: 90h, Independent study: 150h, Total workload: 240h
Type of examination / required course achievements	Written examination, 60 minutes, none auxiliaries
Requirements for participation	Practical work Programming 2 & Software Engineering
Reading list	Literature recommendations will be provided in the lecture.

## 2.5 Mathematics 2

Title	Mathematik 2
Title in English	Mathematics 2
Examination number	9770080
Module code	MAT2
Modul area	Mathematics
Module coordinator	Prof. Dr. Caroline Justen
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Liberal Arts and Sciences
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, summer semester
Courses that make up the module	Mathematics 2 (4 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<ul style="list-style-type: none"> <li>• Integration</li> <li>• Systems of linear equations</li> <li>• Linear Algebra</li> <li>• Multivariable functions</li> <li>• Linear Optimization</li> </ul>
Qualification aims for the module learning objectives/skills	<p>Students passing the course successfully will be able to:</p> <ul style="list-style-type: none"> <li>• develop new mathematical knowledge from calculus and linear algebra which are not part of the mathematics 1 modul: <ul style="list-style-type: none"> <li>– understanding problems in mathematical language</li> <li>– solving mathematical problems of low and medium complexity</li> <li>– transferring mathematical knowledge taught in the course to new simple problems</li> </ul> </li> <li>• train logical reasoning</li> <li>• model simple practical problems in mathematical language</li> <li>• use mathematical textbooks to extend the mathematical topics of the lectures</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	Module Mathematics 1 (recommended)
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Written examination, 60 minutes, auxiliaries: 2 DIN A4 pages handwritten formulary; a calculator that can't calculate 70! (70 Faculty)

Reading list	<p><b>Arens; Hettlich; Karpfinger; Kockelkorn; Lichtenegger; Stachel:</b> Mathematik, Spektrum Akademischer Verlag, 4. Auflage. (2018)</p> <p><b>Opitz, O.; Etschberger, S.; Burkart, W.R.; Klein R. :</b> Mathematik, Lehrbuch für das Studium der Wirtschaftswissenschaften, De Gruyter Studium, Oldenbourg, 12. Auflage. (2017)</p>
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## 3 International Information Systems Bachelor - 3. Semester

### 3.1 Customizing of Information Systems

Title	Customizing von Informationssystemen
Title in English	Customizing of Information Systems
Examination number	9772030
Module code	CUST
Module coordinator	Prof. Dr. Jens Lauterbach
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	Customizing of Information Systems (4 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<p>This lecture introduces to Enterprise Systems (ES), that represent a specific category of information systems. They build on pre-packaged industry best practices embedded in standardized product software and target large-scale integration of data and business processes across all company's functional areas and beyond company borderlines.</p> <p>In the first part of the lecture, after an introduction to the key terms and definitions for ES, process-centric ES and in particular Enterprise Resource Planning (ERP) Systems will be discussed in detail. ERP Systems such as SAP S/4 HANA are the core business applications for many organizations. The lecture will examine</p> <ul style="list-style-type: none"> <li>• Fundamentals of ERP Systems</li> <li>• Basic Functionalities of ERP Systems with the example SAP S/4 HANA</li> <li>• Core processes such as "Order to Cash" and "Procure to Cash"</li> </ul> <p>The second part of the lecture presents the core concepts of ES implementations. With these concepts the necessary steps to configure/customize an ERP system such as SAP S/4 HANA are elaborated.</p>
Qualification aims for the module learning objectives/skills	<p>Students will get an introduction to the core concepts of Enterprise Systems as specific category of Information Systems. After successful participation, students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand and describe the different types and concepts of Enterprise Systems</li> <li>• Understand and describe the functions and processes covered by ERP Systems</li> <li>• Use the SAP S/4 HANA System as business end used for important core processes</li> <li>• Understand and describe the core concepts of Enterprise System Implementations</li> <li>• Configure/customize core feature of the SAP S/4 HANA System</li> </ul>

Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Portfolio exam: <ul style="list-style-type: none"> <li>• Written examination, 60 minutes, with authorized lecture material, 50%</li> <li>• Project work, 10-30 pages, 50%</li> </ul>
Reading list	Literature recommendations will be provided in the first lecture.

### 3.2 E-Business

Title	E-Business
Title in English	E-Business
Examination number	9772040
Module code	EBUS
Module coordinator	Prof. Dr. Arne Mayer
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	E-Business (4 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<ul style="list-style-type: none"> <li>• Areas of e-business</li> <li>• Technical and technological foundations of the internet economy as driver for e-business</li> <li>• Functional view on e-Business information systems</li> <li>• Economics of e-Business, especially electronic commerce</li> <li>• E-business of the future: effects of new technologies</li> <li>• Case based functional analysis and design of e-business information systems</li> </ul>
Qualification aims for the module learning objectives/skills	<ul style="list-style-type: none"> <li>• An understanding of e-business and its areas and their impact on business as well as economy</li> <li>• Abilities for analyzing relevant information systems and their underlying processes and workflows</li> <li>• Practical relevant functional skills for upcoming employments in the industry</li> <li>• Increased their soft skills due to case studies, discussions, and ability to present self-elaborated content</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None; recommended: Introduction to business administration
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Written examination, 60 minutes, none auxiliaries

Reading list	<p>Kollmann, Tobias.: E-Business, Springer Gabler, 7. Auflage, 2019 (in German)</p> <p>Laudon, Kenneth C.; E-commerce : business, technology, society, Pearson (Boston, MA), 2012.</p> <p>Peitz, Martin; Waldfogel, Joel: The Oxford handbook of the digital economy, Oxford Univ. Press, 2012</p> <p>Reynolds, Jonathan: E-Business : a management perspective, Oxford Univ. Press, 2010</p>
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### 3.3 2nd Foreign Language 3 of 4

Title	2. Fremdsprache 3 von 4
Title in English	2nd Foreign Language 3 of 4
Examination number	9771098- 9771504
Module code	II2.FS
Modul area	Foreign Language
Module coordinator	Lecturers at the Faculty of Liberal Arts and Sciences
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Liberal Arts and Sciences
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	2nd Foreign Language 3 of 4 (4 Credit hours)
Teaching language	The module is taught in German for non-native students. Depending on the selection, the module will be taught in Spanish, French, Italian or Chinese language
Content of the module	The course is a combination of linguistic input by the teacher, independent self-study and communicative and application-oriented language teaching, in which all participants are involved. The course takes place in groups of 20-25 participants.
Qualification aims for the module learning objectives/skills	The aim of this compulsory course is to enable students to use the (technical) language in studies and in the professional environment.
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	The module 2nd Foreign Language 3 of 4 builds on the 2nd Foreign Language 2 and 1 from 4 and is assumed. (recommended)
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Portfolio exam: Oral and written parts according to the module specifications of the chosen language of the faculty of Liberal Arts and Sciences
Reading list	Die Literatur wird im Seminar bekannt gegeben.



### 3.4 Programming of Information Systems

Title	Programmierung von Informationssystemen
Title in English	Programming of Information Systems
Examination number	9772020
Module code	PRG3
Modul area	Programming
Module coordinator	Prof. Dr. Jens Lauterbach
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	Programming 3 (4 Credit hours) Practical work Programming 3 (2 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<p>This lecture introduces concepts of programming that are required when organizations want to change or extend their Enterprise Systems (ES). This can for example be required in ES implementations, when the organization introduces a new system and the system needs to be adapted to meet business requirements. As technology platform SAP S/4 HANA will be used and the programming language ABAP.</p> <p>The first part of lecture presents the fundamentals of programming for Enterprise Systems such as:</p> <ul style="list-style-type: none"> <li>• Technical fundamentals and architecture</li> <li>• Basic ABAP language elements</li> <li>• ABAP reporting</li> <li>• Simple data types, variables</li> <li>• Expressions and operators</li> <li>• Control structures</li> <li>• Functions</li> <li>• Complex data types</li> </ul> <p>The second part of the lecture introduces advanced programming concepts</p> <ul style="list-style-type: none"> <li>• Object Oriented Reporting with Abap Objects</li> <li>• Events</li> <li>• Interfaces</li> <li>• Inheritance</li> <li>• Exceptions</li> <li>• Advanced programming techniques</li> </ul>

Qualification aims for the module learning objectives/skills	<p>Students will get an introduction to the programming of Enterprise Systems using SAP S/4 HANA and ABAP. After successful participation, students will be able to:</p> <ul style="list-style-type: none"> <li>• Understand and describe key elements of the programming language ABAP</li> <li>• Understand ABAP source code</li> <li>• Independently implement algorithms in ABAP</li> <li>• Independently develop simple algorithms</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	Programming 1 (recommended)
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 6, ECTS credits: 8, Contact hours: 90h, Independent study: 150h, Total workload: 240h
Type of examination / required course achievements	Written examination, 60 minutes, none auxiliaries
Requirements for participation	Practical work Programming of Information Systems
Reading list	Literature recommendations will be provided in the first lecture.

### 3.5 Statistics

Title	Statistik
Title in English	Statistics
Examination number	9772010
Module code	STAT
Module coordinator	N.N.
Name of university lecturer	You can find the name of the lecturer for the current semester in the timetable.
Faculty	Faculty of Computer Science
Module type	Compulsory module
Duration of module / frequency of module offer	1 semester, winter semester
Courses that make up the module	Statistics (4 Credit hours)
Teaching language	The module is taught in English.
Content of the module	<ul style="list-style-type: none"> <li>• Einleitung <ul style="list-style-type: none"> <li>– Grundbegriffe der Datenerhebung</li> <li>– Einführendes zu R und RStudio</li> </ul> </li> <li>• Deskriptive Statistik <ul style="list-style-type: none"> <li>– Häufigkeiten</li> <li>– Lage und Streuung</li> <li>– Konzentration</li> <li>– Zwei Merkmale</li> <li>– Korrelation</li> <li>– Lineare Regression</li> </ul> </li> <li>• Wahrscheinlichkeitstheorie <ul style="list-style-type: none"> <li>– Kombinatorik</li> <li>– Zufall und Wahrscheinlichkeit</li> <li>– Zufallsvariablen und Verteilungen</li> <li>– Verteilungsparameter</li> </ul> </li> <li>• Induktive Statistik <ul style="list-style-type: none"> <li>– Stichproben</li> <li>– Schätz- und Testfunktionen</li> <li>– Punkt-Schätzung</li> <li>– Intervall-Schätzung</li> <li>– Signifikanztests</li> </ul> </li> </ul>

Qualification aims for the module learning objectives/skills	<p>Nach erfolgreicher Teilnahme am Modul sind die Studierenden in der Lage:</p> <ul style="list-style-type: none"> <li>• Methoden der deskriptiven Statistik zur Analyse von ein- und zweidimensionalem Datenmaterial zu verstehen (u.a. Lagemaße, Streuungsmaße, Zusammenhangsmaße).</li> <li>• das lineare (Einfach-)Regressionsmodell aufzustellen und dessen Grundannahmen zu formulieren.</li> <li>• grundlegende Methoden und kombinatorische Probleme der Wahrscheinlichkeitsrechnung anzuwenden und zu lösen.</li> <li>• relevante Verteilungsklassen für Zufallsvariablen zu beschreiben und die Bedeutung wichtiger Kenngrößen (u.a. Erwartungswert, Varianz) zu verstehen.</li> <li>• verschiedene Methoden der induktiven Statistik für einfache Stichproben (u.a. Punktschätzer, Konfidenzintervalle, Signifikanztests für/auf Erwartungswert und Varianz) zu verstehen, anzuwenden und zu interpretieren um damit geeignete Schlussfolgerungen auf die zugrundeliegende Grundgesamtheit zu ziehen.</li> <li>• mit Hilfe der Statistiksoftware R die in der Veranstaltung eingeführten Methoden eigenständig umzusetzen und Ausgaben der Software sicher zu interpretieren.</li> </ul>
Teaching and learning methods of the module	Seminar format, practical class and workshop, practical work
Prerequisites for participation	None
Possibility to use module within student's own study programme or other programmes	International Information Systems
Total workload and its constituent parts	Credit hours: 4, ECTS credits: 5, Contact hours: 60h, Independent study: 90h, Total workload: 150h
Type of examination / required course achievements	Written examination, 90 minutes, auxiliary: script, own notes, statistics book, notebook, tablet, statistical software (e.g. SAS JMP, R, or similar), internet access
Reading list	<p><b>Bamberg, Günter; Baur, Franz; Krapp, Michael:</b> Statistik, Oldenbourg Wissenschaftsverlag, 17.Aufl. 2012</p> <p><b>Fahrmeir, Ludwig; Künstler, Rita; Pigeot, Iris; Tutz, Gerhard:</b> Statistik, Springer, 7. Aufl. 2012</p>

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