Dear exchange students,

Please find attached information concerning courses that are available for our incoming students. In the field of Business Information Systems, we currently have a range of courses on the 3rd and 4th year level available in English, as listed below.

We would like to warmly recommend our “Spring Welcome Weeks (SWW)” to you which will take place from 17th of February until 28th of February 2020. They offer you the chance of a great start in an international environment. You will meet fellow students, build lasting friendships and get a taste of university life while earning credits and gaining important competencies. Details for SWW 2020 will be provided on time.

If you wish to take part in the German Intensive Course (18th of February until 28th of February), registration is required. You will therefore receive an e-mail by Ms. Karin Sziedat karin.sziedat@hs-hannover.de from the language center of Hochschule Hannover with information how to sign up. More information on the German Intensive Course will be provided on time.

Please note: if you want to take part in the course “German as a foreign language A1” during the semester, it is necessary either to have basic knowledge of the German language or to attend the German Intensive Course beforehand.

In addition to that all guest students are invited to join our multiple language classes at different levels (such as German, French, Italian, Spanish and - of course - English).

Please note:
The majority of Credits has to be gained from Business Information Systems Courses. It is not possible to do ONLY Language Courses.

### Preparatory and Language Modules available

<table>
<thead>
<tr>
<th>Modules</th>
<th>ECTS Credits</th>
<th>Spring 2020</th>
<th>Fall 2020/21</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring Welcome Weeks (SWW)</td>
<td>0</td>
<td>X</td>
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<tr>
<td>Study Camp (SC)</td>
<td>0, 3, 5 or 6 depending on the chosen course(s) in the SC</td>
<td>--</td>
<td>X</td>
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<tr>
<td>Ambassador Destination (AmD)</td>
<td>3</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>German Intensive Course</td>
<td>3</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Additional German Language Courses</td>
<td>6</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
# Modules available in English

## Department of Business Information Systems

<table>
<thead>
<tr>
<th>Modules</th>
<th>Code</th>
<th>ECTS Credits</th>
<th>Spring 2020</th>
<th>Fall 2020/21 to be announced</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Modelling (FCO-IM)</td>
<td>BIS-251</td>
<td>6</td>
<td>X (CSC/FF)</td>
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<tr>
<td>Block seminar: February 24 to 26 at HsH</td>
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<tr>
<td>Workshop: March 29 to April 4 at HAN University, NL</td>
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<tr>
<td>Please note: It is compulsory to attend both parts, seminar and workshop. It is NOT possible to take part only in the workshop.</td>
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<tr>
<td>Interorganisational Business Computing</td>
<td>BIS-259</td>
<td>6</td>
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<tr>
<td>Operations Research</td>
<td>BIS-261</td>
<td>6</td>
<td>X (FF)</td>
<td>--</td>
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<tr>
<td>Data Analysis</td>
<td>BIS-262</td>
<td>6</td>
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<tr>
<td>XML-Databases</td>
<td>BIS-266</td>
<td>6</td>
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<tr>
<td>Software Quality</td>
<td>BIS-267</td>
<td>6</td>
<td>X (YB/SR)</td>
<td>X (YB/SR)</td>
</tr>
<tr>
<td>IT Entrepreneurship</td>
<td>BIS-273</td>
<td>6</td>
<td>X (MC/CL)</td>
<td>--</td>
</tr>
<tr>
<td>Corporate Performance Management</td>
<td>BIS-274</td>
<td>6</td>
<td>X (CvV)</td>
<td>X (CvV)</td>
</tr>
<tr>
<td>IT Project (in English)</td>
<td>BIS-276</td>
<td>6</td>
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<tr>
<td>Data Analysis Master of Science (M.Sc.) in Applied Computer Science</td>
<td>MIN-333</td>
<td>6</td>
<td>X (FH)</td>
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</tr>
<tr>
<td>Database Paradigms Master of Science (M.Sc.) in Applied Computer Science</td>
<td>MIN-331</td>
<td>6</td>
<td>--</td>
<td>X (NN)</td>
</tr>
<tr>
<td>Presentation Techniques</td>
<td>IBS-417-02</td>
<td>3</td>
<td>X (LB)</td>
<td>X (LB)</td>
</tr>
</tbody>
</table>

Subject to modifications

X (Prof. Code) offered by (...)

NN lecturer not yet nominated

? offered for a minimum of 5 students

-- not offered
Indicative Module Contents and Learning Outcomes

Ambassador Destination (AmD), 3 ECTS Credits
Content: Descriptions of different cultures; Cultures of work, of learning, and subject-specific cultures; Communication models and descriptions.
Learning Outcomes: The students possess the main tools for an effective intercultural communication. They are able to describe and reflect their own conduct and that of others, and understand how intercultural interaction takes place in a working or educational environment.
Code: ZSQ-105
The module “Ambassador Destination (AMD)” for English speaking incoming students starts on April 7th (Tuesday) with a kick-off event.
Location: Campus Bismarckstraße 2. Time: 6 to 7 p.m. Room: to be announced.
The module will be held as a block course on Tuesdays from 5 to 8 p.m. on the Campus Bismarckstraße, between April 21st and June 16th.
To register for the module and in order to answer your questions concerning the module, we have set up the following email address: amd-ib@hs-hannover.de.
Registration deadline: April 6th.

Information Modelling (FCO-IM), 6 ECTS
Content: Students learn to carry out an information analysis in a systematic way, according to Fully Communication Oriented Information Modelling (FCO-IM), and to derive an optimal relational database design.
The FCO-IM method is based on verbalizations of concrete examples of information. FCO-IM completely models the user communication about the UoD (Universe of Dis-course) by incorporating the sentence structures of these verbalizations. The result of the analysis process is an Information Grammar (IG) that contains all elementary fact types and constraints on its population along with the sentence structures used in expressing the modelled facts.
Learning Outcomes:
On successful completion of this course component the student will be able to:
- draw up a formal model of the structure of information, based on an analysis of verbalizations of this information, using Fully Communication Oriented Information Modelling (FCO-IM);
- derive an optimal Relational database schema from the above model;
- use the FCO-IM modelling tool Case talk for making information models in FCO-IM;
Code: BIS-251-01 “Submodule of Current Topics in Business Information Systems BIS-251”
**XML Databases, 6 ECTS Credits**

**Content:**
- XML fundamentals, XML namespaces, XML schema
- Architecture of XML applications
- How to persist XML documents
- Querying XML: XQuery and XPath
- XML and (object-) relational databases
- XML databases

**Learning Outcomes:** This course aims to develop knowledge about XML databases and the underlying concepts and technologies. Students are able to apply this knowledge to simple examples from practice. They can assess the importance of XML databases for business application systems. In the exercises students actively resolve comprehension problems by enquiring, and in teams they cope with complex questions. In doing so, they show independence and self-motivation.

**Code:** BIS-266

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**Data Analysis, 6 ECTS Credits**

**Content:** The topics vary and depend on the choice of the main focus of the course. Besides classical statistical methods (multivariate statistics, time series analysis, data mining), more modern themes like conceptual data analysis, artificial intelligence and machine learning are also possible.

Possible agendas for main foci:
- Multivariate statistics: multiple regression, analysis of variance, discriminant analysis, contingency analysis, factor analysis
- Data mining: dependence analysis, association analysis, classification, cluster analysis
- Conceptual data analysis: ordered sets and lattices, graphical representation of concept lattices, algorithms in concept analysis, multidimensional contexts and scales
- Time series analysis: traditional decomposing and seasonally adjusting, time series analysis of market data, modelling, forecasting

**Learning Outcomes:** The students gain an insight into relevant methods of data analysis and are enabled to differentiate between different approaches and to choose appropriate solutions in business practice. They learn to understand and challenge the standard output of typical software packages. By knowing many examples the students are able to recognise situations where modern analytical approaches can be applied. They understand the difference between those complex approaches and more simple descriptive techniques. The exercises offer a great opportunity to work in teams and to learn to address oneself to such sort of problems by applying special software packages.

**Code:** BIS-262
Operations Research, 6 ECTS Credits

Content:
- Operations research and organisational decision-making processes
- Linear programming and simplex method
- Linear programming with special structure, e.g. transportation problem
- Sensitivity analysis
- Dynamic programming
- Combinatorial optimisation
- Branch-and-bound techniques
- Integer programming
- Network analysis, e.g. shortest path problem, maximum flow problem
- Network planning
- Introduction to game theory

Learning Outcomes: The students are familiar with the principles of an OR-based planning. They know the fields of applications of OR-based methods in an operational context and their limitations. They are able to model specific operational problems in an OR-related manner and can solve the problems with specific algorithms. They have such a deep understanding of OR-based approaches that they are able to familiarise themselves with more difficult problems and develop methods of resolution.

Code: BIS-261

Interorganisational Business Computing, 6 ECTS Credits

Content:
- Definition of basics terms
- Skills for IBC
- Types of application integration (information-, business process-, service and portal-oriented)
- Technology for application integration (middleware, integration server, adapter, ESB, SOA)
- Standards (EDI, XML, ebXML)
- Examples of interorganisational systems from different industry sectors (SCM, e-procurement)
- Specific aspects of project management in IBC projects
- Manufacturers and products

Learning Outcomes: Students will know different ways of how to connect application systems interorganisationally. They know the pros and cons of each solution. In practical work the students will analyze and evaluate strategies, architectures, technologies and solutions of interorganisational business computing. Thereafter the students will model and realize their own concept.

Code: BIS-259
Software Quality, 6 ECTS Credits

Content:
- Basic concepts of software quality
- Quality factors and software metrics
- Basics of software testing
- Testing in the software life cycle
- Static and dynamic testing
- Test management
- Test tools
- Test-driven development

Learning Outcomes: The students can name and explain essential concepts of software quality and its measurement. The students can name and explain essential concepts of software testing. They can name and explain the various testing levels in the context of the software life cycle. They can name and explain essential aspects of test-driven development.

Code: BIS-267

IT Entrepreneurship, 6 ECTS Credits

Content
- Characteristics and basic conditions of the IT sector
- Trends and development of the market
- Different phases of managing an enterprise formation
- Generating and evaluating business ideas
- Market and competitor analysis
- Protection of business ideas
- Drawing up a business and finance plan
- Content of a business plan: marketing, sales, service, organization, legal form, financing
- First operating steps

Learning Outcomes: The students will know the success and failure factors of enterprise formation and the special aspects in the IT sector. They train the single steps of an enterprise formation by generating and evaluating their own business ideas and drawing on their own real business plans. Every student can evaluate his/her own suitability to become an entrepreneur.

Code: BIS-273

Corporate Performance Management, 6 ECTS Credits

Content
- Business management concepts
- Data origin of strategic controlling instruments
- Data origin of business intelligence (BI) and dashboard
- Development of strategies based on enterprise and business area
- Business simulation game
Learning Outcomes: The students are able to apply and to assess key performance indicators in terms of business management and controlling. They can make general business decisions independently and understand the dependencies regarding individual indicators as well as their values. They are familiar with the fundamental methods of data sourcing from business intelligence (BI) and controlling processes. By dealing with complex case studies, use cases and simulations in small groups they can solve business problems independently and holistically.

Code: BIS-274

General IT Project, 6 ECTS Credits
Projects:
- IoT in Logistics - Project outline to be announced
- ERP and BI in SCM - Project outline to be announced

Learning Outcomes: The students get the opportunity to gain some experience in practical project management methodologies. They learn to work and decide as a team in cooperation with an external partner. They are able to compare different approaches and to decide in constructive discussions. By applying their specific knowledge in a clearly defined project situation they improve their communication and team-building skills. They are enabled to motivate and organize themselves. They learn to plan the work and to work the plan.

Code: BIS-274

Database Paradigms, 6 ECTS Credits
Content: Alternatives to relational databases. Data modelling, query languages, application programming, internal concepts and implementation details for e.g. OO/OR, XML, graph, document and key/value databases.

Learning Outcomes: Please check the English Modules of the Dept. of Computer Science
Code: MIN-DBP [Master of Science (M.Sc.) in Applied Computer Science]

Data Analysis, 6 ECTS Credits
Content: Approaches to the organization and analysis of large datasets. For example data warehousing, data mining, data quality, information retrieval. Learn possible applications and implementation concepts of these methods. Other current topics, e.g. event-driven architectures or OSGi.

Learning Outcomes: Please check the English Modules of the Dept. of Computer Science
Code: MIN-DA [Master of Science (M.Sc.) in Applied Computer Science]
Presentation Techniques (B2 CEFR), 3 ECTS Credits

Content: This course includes research into an academic topic in detail, preparing and delivering short oral assignments; working in small groups for in-class tasks; learning to structure a presentation effectively; giving constructive feedback to peers.

Learning Outcomes: On completion of this module the student should be able to: self-organize and structure an oral presentation in English; present confidently in front of a small group; arrange information effectively in speech and on presentation slides; discuss and answer questions on their topics and critique each other; effectively deal with anxiety before public speaking occasions; use appropriate vocabulary, verb tenses and sentence structure when giving a presentation.

Code: IBS-417-02

We hope to have helped you to make the right choice with providing the information above. Questions are welcome! Please let us know as soon as possible which courses you would like to account in.

We are really looking forward to meeting you in Hannover.

Kind regards

Prof. Dr. Dagmar Mack
International Coordinator
Department of Business Information Systems

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