Please find below a short description of our International Curriculum for the academic year 2017-2018.

The full description will soon be available on our [website](#).

- [International Curriculum Business & Retail](#)
- [International Curriculum Office Management](#)
- [International Curriculum Applied Computer Science](#)

A link in the course name refers to the content of the 2016-2017 content which remains practically the same for next academic year.
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<tr>
<th>Business and Retail programme</th>
<th>ECTS</th>
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<td>Financial Markets (BU)</td>
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<tr>
<td>ICT (BU)</td>
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<td>Part Word (English taught) (BU)</td>
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<td>Part Spreadsheet applications (BU)</td>
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<tr>
<td>Web design (BU)</td>
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<td></td>
</tr>
<tr>
<td>Graphic design (English taught) (BU)</td>
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<td></td>
</tr>
<tr>
<td>ICT: Database management (English taught) (BU)</td>
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<td></td>
</tr>
<tr>
<td>Techniques de vente (CEFR-B1) (IR)</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Content:

The main topics are:

- Belgian history and geography
- Social and political structure of the country
- Belgian arts and artists (painters, film makers, strip cartoonists, musicians, ...)

Other topics may be explored, such as:

- Peculiar Belgian habits (food and drink, folklore, fairs, parades, festivals, ...)
- Belgian scientists and inventors
- Belgian colonies
- Belgian economy

Prerequisites:

Fair knowledge of English


Content:

- Introduction into the theory of intercultural communication.
- Practical applications (exercises, cases) which are relevant for the professional life, especially regarding communication and cooperation with colleagues from diverse cultural backgrounds.
- English-language business communication, both spoken and in writing, with individual and team assignments.
  - The theory of cross cultural communication: from ethnocentrism to intercultural competence.
  - Defining cultural concepts and parameters.
  - Cross-cultural interaction.
  - The language of presentations and the body language for communicating efficiently.
  - Comparing home and guest/host cultures, and how to act professionally and competently.

Prerequisites:

English, level B2 (CEFR - Common European Framework of Reference for Languages). Good oral skills in English are required.

No prior knowledge on interculturality required (introductory course).

Content:

- E-business and E-commerce: definitions, infrastructure and environment
- E-business strategy
- E-procurement
- E-marketing
- CRM
- Social Networks and marketing

Prerequisites:

Knowledge of marketing strategy


Content:

- Overview of financial markets
  - The Belgian financial sector
    - Traditional role of the different Financial Institutions
    - Banking risks
    - Deontology (‘good practice’)
    - Financial mediators
  - The capital market
    - Basic principles
    - The stock exchange
    - Segmentation of the capital market
    - Capital market (market functioning, players, products)
    - Primary and secondary market
  - The money market
    - Interbanking market
    - The money quantity
    - Inflation/deflation
    - The monetary policy of the ECB
  - Financial Institutions
    - Equity
    - Debt capital
      - Deposits and bonds privately owned (simple retail investment products: return, risk, tax law and costs)
      - Interbanking deposits
      - Financial instruments (bonds, subordinated instruments, derivatives, ...)
    - Credit supply
    - Ethical banking
    - Solvability (ratio’s, Basel I, II and III)
    - Liquidity
    - Rentability
  - The foreign exchange market
    - Exchange rates
• Interdependence of exchange rates
• International trade- and capital flows
• Evolutions in the financial world
  • Disintermediation
  • Diversification
  • Deregulation
  • Technological progress
  • European financial and monetary integration
  • The financial crisis
• Money transfer systems
  • IBAN and BIC
  • Control of the money transfers
  • Settlement systems
• International financial institutions
  • IMF
  • Worldbank
  • FED / ECB

Prerequisites:
English, level B2

Financial Statements Analysis:

Content:
• Study of Financial statements and rules of appreciation
• Balance sheet and profit and loss account
• Financial balance
• Horizontal and vertical analysis
• Cash flow analysis
• Interpretation of financial statements based upon ratios
• Comparing companies
• Social annual report

Prerequisites:
Management or General and corporate accounting.

Content:

The process of internationalisation
- The international context (economics, social, cultural, technological)
- Going international or not?
- Which specific markets to move on to or retain in, (market determination, market selection, market concentration and spreading, different planning models).
- Market information and market research
- Entry strategies
- The IM-Marketing-mix

Geo-political and geo-economic theories

Prerequisites:
Marketing strategy


Content:

- Historical survey.
- HR matrix & Organisation Development.
- Company positions, job descriptions, competency profiles.
- Performance and assessment interviews.
- Employability.
- Training, personal Development Plan.
- Retention and motivation.
- Compensation and benefits.
- Employer branding.
- Recruitment, selection and screening.
- Discharge & exit management.
- Communication.

Prerequisites:
Final objectives of the Management course.


Content:

- Introduction
- Strategic analysis
  - external analysis
  - internal analysis
- Formulation and designing of the Strategy
  - Competitive advantage
  - Pursuing cost benefits
  - Pursuing marketing differentiation
- Other differentiation strategies
- Mergers, acquisitions, diversification and growth
- International strategy
- Implementation and Assessment of Strategy
  - Implementation of Strategy
  - Management monitoring
- Sound management
- Sustainable entrepreneurship
- Entrepreneurial objectives
- Cases

Prerequisites:

There are no prerequisites for this course.


Content:

- The conceptual framework: the basic concepts and principles
- The system flaws in our global society
  - Positive Feedback
  - Lack of closed loop systems
  - Poverty and inequality
  - Population growth
  - Loss of biodiversity
  - Ecological footprint
- Causes and Consequences of Climate Change
- Transition to a sustainable society
- Best practices

Prerequisites:

English, level B2.

**Business Process Management:**

Content:

- Basics terms and principles of BPM
- Basic terms of Performance Management
- BPMN Modelling techniques
- BPMN tools
- Cases

Prerequisites:

English, level B2
### Supply Chain Management: [Link](https://bamaflexweb.hogent.be/BMFUIDetailxOLOD.aspx?a=72987&b=5&c=2)

**Content:**

- Supply chain management
  - Concepts + Customer Order Decoupling point + Sales&Operations Planning
  - Independent vs dependant demand

- Demand management
  - techniques of forecasting

- Stock management
  - Stock models and replenishment systems
  - The ABC classification

- Procurement management
  - Evolution in supplier collaboration
  - KPI’s

- Production management
  - ATP
  - Lean management

- Distribution planning
  - Formulating optimal distribution network

**Prerequisites:**

Final objectives of course Business Process Management

### E-Fulfilment: [Link](https://bamaflexweb.hogent.be/BMFUIDetailxOLOD.aspx?a=72988&b=5&c=2)

**Content:**

- E-Ordering
- E-warehouse
- E-delivery
- E-retour

**Prerequisites:**

Logistics or Supply Chain Management

### Business project: marketing case: [Link](https://bamaflexweb.hogent.be/BMFUIDetailxOLOD.aspx?a=72989&b=5&c=2)

**Content:**

- Marketing strategy: integration of elementary models
- Application in hybrid enterprises (on- and offline; B2B and B2C; goods and services)
- Revenue and business models: analyses of existing models and design of alternatives, taking into consideration the limitations of SME businesses.
- Research in all these fields
Prerequisites:


Content Management Systems:

Content:

- All about Joomla!
- Installing Joomla!
- Configuring Joomla!
- The Basics of Joomla! Extensions: Components, Modules, Plugins, and Languages
- Working with Joomla! Templates: The Basics
- Marketing and Caring for Your Joomla! Web Site and web shop

Prerequisites:

Computer skills


Content:

Functioning of an ERP software
Business processes

Prerequisites:

Being able to use the current possibilities of the management systems as efficient as possible and having basic keyboard skills.


Content:

- Introduction:
  - Unification of the European insurance market
  - Life insurance and Non-Life insurance
  - Diversification of risks
- Supervision of insurance and reinsurance undertakings in the single European market
- Private International Law on insurance contracts: regulations on solving conflicts of law with regard to insurance
- Insurance mediation in the single European market
- Reinsurance
  - Quota share systems
  - Surplus systems
  - Excess of loss systems
  - Stop loss systems
- Technical aspects related to insurance undertakings:
• calculation of premiums
• technical reserves
• equilibrium-theory: general approach and exercises
• case studies and exercises based on life-insurance and non-life insurance policies.

Prerequisites:

Knowledge of insurance.
Knowledge of financial calculations.


Content:

• BIN-standards
• Page layout
• Dividing documents into sections
• Tables
• Headers and footers
• Fields
• Styles
• Numbering headers and footers
• Footnotes
• Tables of contents
• Tables
• Templates
• Mailings
• Graphic possibilities
• Editing
• Making a presentation
• Adjusting the contents and layout of a presentation
• Views
• Models
• Templates
• Organisation charts
• Animating presentations
• Printing

Prerequisites:

Having basic keyboard skills.
Being able to touch-type is an asset.
Being able to use the basic possibilities of an operating system.
Being able to look up information on the internet.
Being able to use the basic functions of word-processing
Part Spreadsheet applications:

Content:

Revision of basic techniques of a spreadsheet under windows, i.e.:

- Using formulas
- Layout of worksheets
- Printing
- Defined names
- Basic functions (sum, average, maximum, minimum, total)
- Charts:
  - Making graphs
  - Laying out graphs
  - Formatting graphs
- Tables:
  - Making tables
  - Validating
  - Sorting
  - Filtering (automatic and advanced)
  - Database functions
  - Subtotals
  - Pivot tables
- Advanced functions:
  - In-depth study of functions: date and time, logic, search, nesting functions
  - Securing sheets and folders
  - Linking
  - Basic macros and hyperlinks

Prerequisites:

Having an elementary knowledge of the basics of a spreadsheet is recommended if students do not have any elementary knowledge of the basics of a spreadsheet, they will be recommended to enrol in the Introduction to Excel course.

**Content:**

1. Introduction to web design
2. Basic principles of HTML and CSS
3. Website design editor

- Surroundings
- Planning and implementing the site structure
- Layout
- CSS
- Hyperlinks
- Images and illustrations
- Lists
- Tables
- Templates
- Forms
- Uploading the site
- Using DIVs

**Prerequisites:**

Having a fair practical knowledge of and being able to use a computer (managing files and data, using e-mail, using a browser...).


**Content:**

- What is DTP?
- Graphic guidelines
- Using the programme
- Raster
- Working with text and text editing
- Illustrations
- Drawing
- Use of colour

**Prerequisites:**

Knowledge of the operating system of the PC
Thorough knowledge of text-processing

**Content:**
- Basic terminology concerning database programs
- Creating tables, making relations, inputting data (importing and exporting)
- Designing queries: selection queries (parameter and join-queries included) and action queries
- Working with forms and reports
- Introduction to macros

**Prerequisites:**

Being able to use the prevailing possibilities of an operating system.


**Content:**
- Sales techniques based on the relationship/advice sales method
- Steps in building a customer relation
- Difficult conversational situations in sales contexts
- Dealing with suspect people and theft

**Prerequisites:**

- International exchange students can take the course on condition that they can read and speak French at CEFR B2 level and have basic knowledge of the retail world. This is a practical course, focusing on communication practice.
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<th>Language programme</th>
<th>ECTS</th>
<th>Semester</th>
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<td>1</td>
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<tr>
<td>Français entraînement I (multimédia - CEFR-B1) (IO)</td>
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<tr>
<td>Français II et communication (CEFR-B1+) (IO)</td>
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<td>Français entraînement II (multimédia - CEFR-B1+) (IO)</td>
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<td>Français culture (CEFR-B1+) (IO)</td>
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<td>Français entraînement III (multimédia - CEFR-B2) (IO)</td>
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<tr>
<td>Français III et communication professionnelle (CEFR-B2) (IO)</td>
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<tr>
<td>English I (CEFR-B1) (IO)</td>
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<tr>
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<td>English Culture in UK and USA (CEFR-B1) (IO)</td>
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<td>English II and Business Communication (CEFR-B2) (IO)</td>
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<tr>
<td>English language training II (CEFR-B1+) (IO)</td>
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<tr>
<td>English III and Business Communication (CEFR-B2) (IO)</td>
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<tr>
<td>English language training III (CEFR-B2) (IO)</td>
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<tr>
<td>Communication Français-English (CEFR-B1+) (IO)</td>
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<td>Partim Communication Français (CEFR-B1+) (IO)</td>
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<tr>
<td>Partim Communication English (CEFR-B1+) (IO)</td>
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<td>Deutsch I (CEFR-A1) (IO)</td>
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<td>Deutsch II (CEFR-A2) (IO)</td>
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<td>Deutsch Landeskunde (CEFR-A2+) (IO)</td>
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<tr>
<td>Español II (CEFR-A2) (IO)</td>
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<tr>
<td>Cultura hispánica (CEFR-A2+) (IO)</td>
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</tbody>
</table>


**Content:**
Basic Grammar and exercises.
Vocabulary in a general and professional context.

**Prerequisites:**
French level B1
**Français entraînement I (multimedia CEFR-B1):**

Content:
- Training of talking and listening skills.
- Training of telephoning.
- Introductory translation exercises

**Prerequisites:**
French level B1

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**Français II et communication (CEFR-B1+):**

Content:
- Study in depth of grammatical structures
- Extension of general and business related vocabulary
- Spelling
- Study of business related topics

**Prerequisites:**
French level B1+

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**Français entraînement II (multimedia CEFR-B1+):**

Content:
- Speaking and listening exercises in professional situations in the language lab
- Intensive language training
- Listening exercises / spelling

**Prerequisites:**
French level B1+

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Content:
- Study of various political, social, economic and cultural aspects of Francophone countries.
- Expansion of the general vocabulary and oral communication.

**Prerequisites:**
French level B1+
**Français entraînement III (CEFR-B2):**

**Content:**
Intensive training of speaking and listening skills in an economic and business-oriented context. Study and discussion of business-oriented documents (texts, audio-visual material) as a starting point for oral and written communication in French.

**Prerequisites:**
French level B2.

**French III et communication professionnelle (CEFR-B2):**

**Content:**
- complex grammatical structures
- business and professional related vocabulary
- spelling

**Prerequisites:**
French level B2.


**Content:**
- Revising and enhancing grammar through various exercises.
- Enhancing general vocabulary systematically.
- Studying topical and study-related texts.
- Further developing the four basic skills: reading, listening, speaking and writing.
- Basics of translation.

**Prerequisites:**
English level B1

**English language training I (CEFR-B1):**

**Content:**
- Practising oral/listening skills in on both standard and business-oriented contexts.
- Telephoning in English.
- Introductory translation exercises

**Prerequisites:**
English level B1
English Culture in UK and USA (CEFR-B1):

Content:
- oral communication
- studying various social, political, economic and cultural aspects of English-speaking regions
- vocabulary expansion

Prerequisites:
English level B1.

English II and Business Communication (CEFR-B2):

Content:
- Further deepening of the grammatical skills.
- Expansion of the general and business vocabulary.
- Study of current business texts.
- Further attention goes also to specific tasks of the Management Assistant, e.g. organizing business trips and reporting.

Prerequisites:
English level B2

English language training II (CEFR-B1+):

Content:
- job-oriented listening and speaking practice
- thorough language training (oral and writing)

Prerequisites:
English level B1+

English III and business communication (CEFR-B2):

Content:
- Practising specialized reading, speaking and writing skills.
- Extending business-oriented vocabulary by means of topical texts.
- Gaining insight into the business world and the responsibilities of the Management Assistant.

Prerequisites:
English level B2.
### English language training III (CEFR-B2):  

**Content:**
Study and discussion of topical, business-oriented documents (texts, audio-visual material etc.) as a starting point for oral and written communication in English. The main focus will be language and form used in written and oral communication, in addition to reviewing/practising business-oriented vocabulary.

**Prerequisites:**
English level B2

### Business communication French–English (CEFR-B1+):  

**Content:**
Communication role plays aimed at practical situations supplemented by written assignments.

**Prerequisites:**
French level B1+

### Partim Business communication French (CEFR-B1+):  

**Content:**
Communication role plays aimed at practical situations supplemented by written assignments.

**Prerequisites:**
French level B1+

### Partim Business communication English (CEFR-B1+):  

**Content:**
Communication role plays aimed at practical situations supplemented by written assignments.

**Prerequisites:**
English level B1+

### Deutsch I (CEFR-A1):  

**Content:**
Learning the essential basic vocabulary and basic grammar through theory and exercises. (Verbs, cases, articles, nouns, adjectives, prepositions, pronouns, numerals, adverbs, conjunctions, simple sentence structure)

**Prerequisites:**
No prerequisites

**Content:**
Oral and written business communication (business correspondence and telephoning conventions).

**Prerequisites:**
German Level A2 obtained, B1 advised

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**Content:**
What's typically German? Language, geography, history, population, political system, economy, culture, education, media, religion, legal system, transport system, music, movies, literature, art, sports, science, eating and drinking, Germany from A (Adventskalender) till Z (Zappelphilipp).

**Prerequisites:**
German level A2, B1 advised

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**Content:**
Written and oral business communication (conventions of correspondence and telephone calls).

**Prerequisites:**
Spanish level A2 obtained

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**Content:**
Reading texts and documents concerning Spain: history, customs, regional differences, politics, economy, media etc. + portfolio (press file)

Latina America: general introduction

**Prerequisites:**
Spanish level A2+ obtained, B1 advised.
### IT Program

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<th>Semester</th>
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<td>Semester 1</td>
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<tr>
<td>Databases and Transaction systems (II)</td>
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<td>Semester 1</td>
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<tr>
<td>Future IT (English taught) (II)</td>
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<tr>
<td>(Partial Module) Topics (II)</td>
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<td>Semester 1</td>
</tr>
<tr>
<td>(Partial Module) Artificial Intelligence (II)</td>
<td>2</td>
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</tr>
<tr>
<td>Native apps I (English taught) (II)</td>
<td>3</td>
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<tr>
<td>Native apps II: mobile apps for iOS (English taught) (II)</td>
<td>4</td>
<td>Semester 1</td>
</tr>
<tr>
<td>Web apps (English taught) (II)</td>
<td>3</td>
<td>Semester 1</td>
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<tr>
<td>Project III: Mobile apps (English taught) (II)</td>
<td>5</td>
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<tr>
<td>Introduction to the Mainframe (English taught) (II)</td>
<td>3</td>
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<tr>
<td>Batch applications (English taught) (II)</td>
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<tr>
<td>e-commerce (English taught) (II)</td>
<td>4</td>
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<tr>
<td>Business Software (English taught) (II)</td>
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<tr>
<td>Project III: e-Business (English taught) (II)</td>
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<td>IT2Business (English taught) (II)</td>
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<tr>
<td>Research Techniques (II)</td>
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<tr>
<td>Databases II (II)</td>
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<tr>
<td>i²Talent (English taught) (II)</td>
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<td>OO Design III (II)</td>
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<tr>
<td>Web applications IV (II)</td>
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<tr>
<td>Projects - workshops II: Programming (II)</td>
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<tr>
<td>Computer Networks II (II)</td>
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<tr>
<td>Computer Networks III (II)</td>
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<td>Semester 2</td>
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<tr>
<td>Projects - workshops II: System Administration (II)</td>
<td>6</td>
<td>Semester 2</td>
</tr>
<tr>
<td>i²Talent (English taught) (II)</td>
<td>3</td>
<td>Semester 2</td>
</tr>
</tbody>
</table>

**Remark:** in 2017-2018 all courses mentioned below will be taught in English (even if the website indicates differently at this moment).
### Courses scheduled during semester 1:

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<thead>
<tr>
<th>Course</th>
<th>ECTS</th>
<th>Track Mobile Apps</th>
<th>Track Mainframe</th>
<th>Track E-business</th>
</tr>
</thead>
<tbody>
<tr>
<td>Future IT Topics Artificial Intelligence</td>
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<td>Databases and Transaction Systems ***</td>
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<td>Databases III</td>
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</tbody>
</table>

*: the course ‘Project Mobile Apps’ can only be selected in combination with ‘Native Apps I’, ‘Native apps II’ and ‘Web Apps’.

**: the courses ‘Batch applications’ and ‘Databases and Transaction Systems’ can only be selected in combination with ‘Introduction to the Mainframe’.

***: the course ‘Databases and Transaction Systems’ can only be selected in combination with ‘Introduction to the Mainframe’ and ‘Batch applications’.

****: the course ‘Project E-Business’ can only be selected in combination with ‘E-commerce’ and ‘Business software’.

Besides the restrictions mentioned above, you can combine the courses any way you like. Nevertheless, we suggest you to choose a specific track and to select at least all courses that have the same colour. This enables you to gain the knowledge of at least one entire set of courses.

### Track mobile Apps

In this track you learn how to develop apps for Android and iOS devices, and applications in JavaScript.

If you would like to choose this track, make sure to include all blue courses in your program. You can then complete the rest of your program by adding your favourites from the remaining courses.

### Track Mainframe

In this track you learn how to use your development skills in a mainframe environment. In the near future, there will be a shortage on the labour market as many people with mainframe skills will be retiring.

If you would like to enter the mainframe world, make sure to include all green courses in your program. You can then complete the rest of your program by adding your favourites from the remaining courses.
Track E-business

In this track you learn how to build good and attractive web shops.

If you would like to choose this track, make sure to include all red courses in your program. You can then complete the rest of your program by adding your favourites from the remaining courses.


Content:

- Designing and implementing a user interface, compliant with the guidelines of Android
- Learning the Android platform’s most important APIs.
- Using the development tools, techniques and patterns that are common to the Android platform.
- Consuming services (REST)

Prerequisites:

Thorough knowledge of Java
Thorough knowledge of Software Design Patterns
Basic knowledge XML
Basic understanding of Databases
Basic understanding of Web Services


Content:

- Introduction to iOS 8.
- The Swift programming language.
- The Xcode6 IDE.
- The iOS platform:
  - Application life cycle.
  - Applying model-view-controller.
  - Auto Layout and Size Classes.
  - Using views and view controllers.
  - Connecting with a web service

Prerequisites:

Advanced knowledge of software development using an object-oriented programming language.

Content:

- JavaScript design patterns
- JavaScript MVC
- JavaScript unit testing
- Web components
- Performance testing
- Hybrid web apps
- Mobile frameworks
- JavaScript package manager
- JavaScript task runner

Prerequisites:
Advanced knowledge of software development in Javascript.


Content:
Develop a mobile application for 2 chosen platforms.

Prerequisites:
Only in combination with ‘Native Apps I’, ‘Native Apps II’ and ‘Web Apps’.
Thorough knowledge java
Thorough knowledge HTML, CSS and Javascript
Basic knowledge Software Development process
Basic knowledge GIT, Trello

Introduction to the Mainframe:

Content:

- What is a Mainframe: batch jobs and online use?
- Data sets, parameters, catalogue.
- ISPF
- SDSF.
- Programming languages in Z/OS.
- Compiling and linking.
- JCL syntax.
- REXX.

All topics are illustrated by examples and practiced under supervision.

Prerequisites:
Knowledge of software development.

Content:

- Introduction
- Data types
- Basic elements
- Mainframe data set processing
- Tables
- Inter-program communication
- Error handling

All topics are illustrated by examples and practiced under supervision.

Prerequisites:

Only in combination with: Introduction to the mainframe


Content:

- Transactional systems: CICS
- DB2: table spaces and indices
- Using databases from a Cobol program.

All issues are illustrated using examples and practiced under supervision.

Prerequisites:

Knowledge of software development and relational databases.
Only in combination with ‘Introduction to the Mainframe’ and ‘Batch applications’.


Content:

- Designing and the day-to-day management of website through Drupal.
- Modifying existing modules and writing new modules in Drupal
- Adjusting the layout in Drupal: theming
- Create and customize an online store with Drupal theming commerce
- Using PHP for Drupal

Prerequisites:

Knowledge of software development.

Content:

- Understanding of project methodology:
  - Create and execute full project plan
  - Focus on risk analysis
  - Cost/Benefit analysis
  - Quality measurement
- Knowledge of elements of IT governance:
  - Advise Make or Buy decision to the customer.
  - Using BPM in order to define the requested business processes of a customer.
- Knowledge of Business Software (advanced ERP, CRM, MES, EDI):
  - Best practices with the implementation of ERP software
  - Customisation, interfacing and add-ons
  - Collaboration of business and IT during an ERP project
  - Risks during ERP implementation
  - Change management in an ERP environment
  - Understanding CRM, MES, EDI
  - Implementing the most important business processes in ERP

Prerequisites:

Software development skills are required.


Content:

The elaboration of a website with a web store. The case is specified by the field. Additionally, a digital marketing plan is established for the company. The elaboration of the project is monitored on the basis of project planning.

Prerequisites:

Only in combination with ‘E-Commerce’ and ‘Business software’.

Content:

Lectures given by guest speakers, visits to trade fairs

Prerequisites:

Being familiar with computer science.

Future IT – Artificial Intelligence:  

Content:

- Defining and situating artificial intelligence.
- The software agent paradigm.
- Techniques of machine learning.
- Introduction to speech and language processing.
- Ethical and philosophical aspects of AI.

Prerequisites:

Advanced knowledge of software development.
Basic knowledge of data structures


Content:

- Oracle database architecture
- Oracle database management
- NoSQL
- Big Data- introduction to HADOOP

Prerequisites:

Knowledge of relational databases and SQL.
Basic programming skills (be acquainted with variables, constants, arrays, if then else, loops, ...).
Basic knowledge of Java and Java Collections (Map, Set).
Basic knowledge of Linux commands.
Spring semester

IT Courses scheduled in semester 2:

<table>
<thead>
<tr>
<th>Course</th>
<th>ECTS</th>
<th>Track System Administration</th>
<th>Track Software Development</th>
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<tr>
<td>Databases II</td>
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<tr>
<td>Research Techniques</td>
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<td>Computer Networks II</td>
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<td>Computer Networks III*</td>
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<td>Project System Administration**</td>
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<td>OO Design III</td>
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<td>Web applications IV***</td>
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<td>Project Software Development ****</td>
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<td>iTalent*****</td>
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</table>

*: the course ‘Computer Networks III’ can only be selected in combination with ‘Computer Networks II’.

**: the course ‘Project System Administration’ can only be selected in combination with ‘Computer Networks II’ and ‘Computer Networks III’.

***: the course ‘Web applications IV’ can only be selected in combination with ‘OO Design III’.

****: the course ‘Project Software Development’ can only be followed in combination with ‘Web applications III’ and ‘OO Design III’.

*****: the course ‘iTalent’ can only be selected in combination with ‘iTalent’.

We recommend you to choose a specific track instead of selecting blue courses as well as green courses. The restrictions mentioned above cannot be overruled.

**Content:**

CCNA2 - “Working at a Small-to-Medium Business or ISP”

**Prerequisites:**

Cisco CCNA1.

Knowledge of operating systems (LINUX and Windows Server).


**Content:**

CCNA 2 "Routing and switching essentials"-part 2

CCNA 3 "Scaling Networks"-part 1

**Prerequisites:**

Only in combination with ‘Computer Networks II’.


**Content:**

Students work on an interdisciplinary project consisting of several assignments within the domain of system and network administration. Teams apply agile methodologies in order to independently work on and finish said assignments. That involves a.o.: searching for appropriate documentation, writing out test plans, documenting and/or automating procedures, validating results using the test plan.

**Prerequisites:**

Only in combination with ‘Computer Networks II’ and ‘Computer Networks III’.

**Content:**

Design Patterns

- Factory method
- Abstract factory
- Builder
- Template Method
- Command
- Iterator
- Composite
- Adaptor
- Proxy
- Singleton

**Prerequisites:**

Knowledge of Test Driven Development, design principles and UML.


**Content:**

- Common frameworks for developing enterprise web applications in Java.
- Common principles and techniques:
  - Inversion of control / dependency injection.
  - Aspect-oriented programming.
  - Enterprise patterns.
  - Client/server architecture.
- Security aspects.

**Prerequisites:**

Good knowledge of programming in Java.
Only in combination with ‘OO Design III’.


**Content:**

A group of students develops an interdisciplinary project.

**Prerequisites:**

Only in combination with ‘OO Design III’ and ‘Web applications IV’.

Knowledge of Microsoft ASP.NET MVC, Entity Framework and C#.

Knowledge of design patterns.

**Content:**

- Team oriented and project-based working:
  - Overview of the different processes and control steps in project management.
  - Contributing to projects.
  - Project communication.
- ERP system:
  - Modules of ERP
  - Business functions
- Business processes:
  - Management processes
  - Operational processes
  - Supporting processes
- Understanding the modelling of processes
- Understanding the IT and Business alignment
- Understanding the quality of IT services

**Prerequisites:**

Understanding business processes.

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**Content:**

- SQL: DML, DDL, DCL
- Multi-user RDBMS: transactions, cursors, triggers, stored procedures

Data warehousing

**Prerequisites:**

Knowledge of database design: EERD and normalization.
Basic knowledge of SQL: inner join, grouping, aggregate functions

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**Content:**

- Performing surveys or interviews.
- Statistical analysis of quantitative data.

**Prerequisites:**

Basic knowledge Math
Basic writing skills
Basic understanding Excel
Content:

- The student extends his personal development plan
  - MBTI
  - Enneagram
  - Ofman
  - DISC
  - Competence Indicator
  - Peer assessment
  - A testimony
- The student participates in internal/external workshops
- The student participates in intercultural activities
- Further development of digital and dynamic portfolio

Prerequisites:

Only in combination with I²Talent.

Content:

The students learn to compile a portfolio.
The students start to draft a personal development scheme:

- MBTI
- Enneagram
- Peer Assessment
- Testimony

The students write a CV

The students attend internal and external workshops/lectures
The students participate in intercultural activities

Prerequisites:

None.