Universität Bamberg

Master degree programme International Software Systems Science

Information brochure for the freshmen introduction on 5th & 6th of April 2018

Bild: Andrea Müller

Timetable for the freshmen introduction

Thursday, 5th of April 2018	
09:00 – 10:30	**For all majors - plenary assembly in lecture theater (in German only)** `WE5/00.022` • Prof. Dr. Ute Schmid, faculty dean • Prof. Dr. Daniela Nicklas, faculty dean of studies • Prof. Michael Mendler, Ph.D., study abroad representative • Caroline Oehlhorn, Equal Opportunities representative • Sabine Haselbek, contact point for disabled persons at the university • Maximilian Raab and Dr. Carolin Stange, ServiceDesk WI and exam commitee AI • Dipl. Päd. Kai Imhof, student counselling of the university • Lara Aubele and Lukas Genßler, student association representatives *Distribution into groups and announcment of meeting point for the start of the tour*
10:45 – 12:00	**Master ISoSySc - Introduction** Aboubakr Benabbas in `WE5/04.004`
Lunch time	
13:30 – 14:30	**University and library tour**
14:30 – 16:00	**Get Together in the ERBA Foyer** Meet and greet your professors and staff of the faculty.
Around 19:00	**Freshmen evening in Bamberg (pub crawl)** • Meeting Point: ZOB (Zentraler Omnibus Bahnhof)

Friday, 6th of April 2018 Please bring your own laptop.	
11:00 – 11:30	Short tour through the university building at Feldkirchenstraße 21 Meeting Place: Main Entrance
11:30 – 12:00	Lunch in the “Mensa” (University Cafeteria) in Feldkirchenstraße 21
Lunch time All tutorials afterwards will take place at the ERBA campus (An der Weberei 5), please take the bus on your own.	
13:00 – 15:45	**Introduction to the IT services of the computing centre by the IT-Support and introduction to the university online services** (FlexNow, UnivIS, etc.) Meeting Point: ERBA Foyer
from 16:00	**Tutorial** with individual support to set up a schedule Meeting Point: ERBA Foyer

Welcome to the Faculty of Information Systems and Applied Computer Sciences at the University of Bamberg

Dear Students,

Professors and staff of the Faculty of Information Systems and Applied Computer Sciences are delighted to welcome you to the University of Bamberg. This guide is intended to help you familiarize yourself with the university and issues relating to your upcoming studies. We would like to cordially invite you to participate in the Introduction Days for first-year students taking place on 5th and 6th of April 2018 in the ERBA building "An der Weberei 5".

The faculty aims at integrating first-year students into the daily life at the university from their first day on, helping you avoid "wrong tracks" and at inspiring you to actively take part in university life. During the Introduction Days we will give lectures on topics of general interest for first-year students and take up special issues in various tutorials. (The updated and detailed schedule is to be found on the left side.) We especially want to encourage you to plan your schedule for the first semester during the Introduction Day and get to know important contact persons for different issues coming up during your studies.

The Introduction Day for first-year students is being organised by the *Fachschaft WIAI*[1] and financially supported by the "action programme to shorten the length of study at Bavarian universities" (*Aktionsprogramm zur Verkürzung der Studiendauer an den Universitäten Bayerns*) established by the Bavarian State Ministry for Education, Science and the Arts (*Bayerisches Staatsministerium für Bildung und Kultus, Wissenschaft und Kunst*).

The Faculty of Information Systems and Applied Computer Sciences wishes you a good start at the University of Bamberg and success for your studies.

[1] "WIAI" is an acronym for German *Fakultät für Wirtschaftsinformatik und Angewandte Informatik* [Faculty of Information Systems and Applied Computer Sciences].

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1 The Otto-Friedrich-University of Bamberg

The Otto-Friedrich-University of Bamberg is a medium sized university with a distinct profile in humanities and cultural studies, social and economic sciences as well as human sciences along with applied computer sciences. The university splits into the following four faculties:

- Humanities, "*Geistes- und Kulturwissenschaften*" (**GuK**),
- Social Sciences, Economics and Business Administration, "*Sozial- und Wirtschaftswissenschaften*" (**SoWi**),
- Human Sciences and Education, "*Humanwissenschaften*" (**Huwi**), and
- Information Systems and Applied Computer Sciences, "*Wirtschaftsinformatik und Angewandte Informatik*" (**WIAI**).

The name "Otto-Friedrich-University" has the following origin: In 1647 prince bishop Melchior **Otto** Voit of Salzburg founded the predecessor of today's university; Prince bishop **Friedrich** Karl of Schönborn is said to be one of the first major sponsors of the university and expanded it in 1735 generously by a law faculty (which no longer exists today).

The university is distributed over numerous buildings in different parts of the city. A complete list and a map can be found online:

https://www.uni-bamberg.de/en/university/directions-locations/ .

As a student in the International Software Systems Sciences degree, you will attend most of your classes at the following location:

- ERBA, An der Weberei 5 (abbreviated **WE5**): WIAI faculty, Language Centre, Erba Library, Cafeteria

Apart from the ERBA, you may need to be aware of the following other University locations (note the abbreviations which are used in the coding of class room and office numbers):

- Feldkirchenstraße 21 (**F21** or **Feki**: Library, canteen (also called *Mensa*), SoWI faculty and classrooms in the old canteen "alte Mensa" (**FMA**)
- Computing Centre (*Rechenzentrum* **RZ**), Feldkirchenstraße 21
- Kärntenstraße 7 (**KÄ7**): Part of the SoWI faculty, Chair and professorship for business education
- An der Universität (**U2 – U11**), Am Kranen (**KR1 – KR14**): Classes for modules offered by the GuK faculty
- Markusplatz 3 (**M3**) and Markusstraße 8a (**MG1** and **MG2**): Classes for modules offered by the Huwi faculty
- Austraße 37 (**AU37**): Women's Office, "Studentenwerk"
- Kapuzinerstraße (**K16**, **K20/22**, **K25**): University Board of Management, Central University Administration, Student Office, Central Student Consultancy and International Office.

2 The WIAI Faculty

The Faculty of Information Systems and Applied Computer Sciences (WIAI), which was established on the 1st of October 2001, is characterized by an interdisciplinary curricular layout that remains the only one of its kind in Germany. It combines the field of information systems, with its foundations in both economics and computer science, with a range of applied computer sciences focused on the humanities and human sciences, and also with classic subject areas pertaining to theoretical and practical computer science. Synergy with the university's main focus areas in the humanities, human sciences and in social sciences, economics and business administration is fostered by integrative course offerings and joint research endeavours. Due to this application-oriented curricular profile within a forward-thinking, thoroughly integrated modern course offering, our research-led degree programmes occupy a unique place in international education. Thus the faculty embraces the increasingly important non-technical dimension of the applied computer sciences with currently 15 research chairs and professorships of high international standing. These are organised in three sections:

- The *Information Systems* section with course offerings in *Information Systems* and *International Information Systems Management* has a long tradition in Bamberg: in the winter semester 1987/88 the first study course for "information systems" was established at a Bavarian university as the third one in Germany.
- The *Applied Computer Science* section with course offerings in *Applied Computer Science* and *Computing in the Humanities* addresses the usage of computer science in innovative applications. The required foundations and methods in informatics are imparted as well as a full qualification profile for the conception and development of user-oriented applications from media informatics through cultural computing and cognitive science to smart environments.
- The *Computer Science* section provides course offerings in *Software Systems Science* focusing on the advanced engineering of complex distributed and mobile software systems, which are gaining critical importance in modern IT applications and infrastructures. The modules cover advanced software engineering methods, aspects of privacy and security in IT, state-of-the-art networked, distributed and mobile software technologies, as well as novel techniques for analysing and verifying complex software.

We have 1500 enrolled students in our 11 bachelor's and master's degree programmes which make up 10% of the total number of students in Bamberg. The research-led education at the faculty provides for a strong international component by including an optional study abroad experience and foreign language modules. Our teaching is characterized by a first-class supervision, modern lecture and seminar rooms, well-furnished laboratories and a library at the new university facilities on the *"Erba-Insel"*.

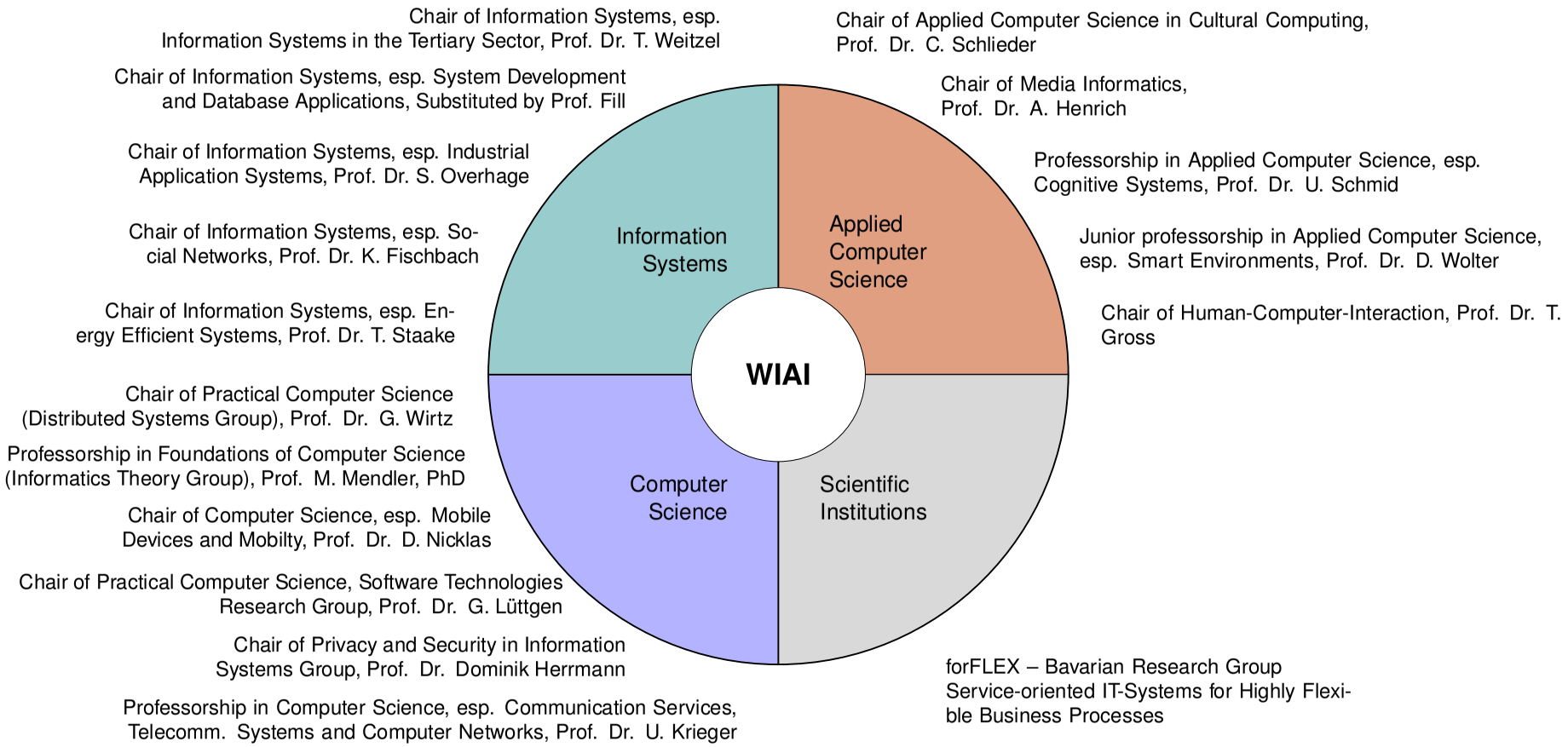


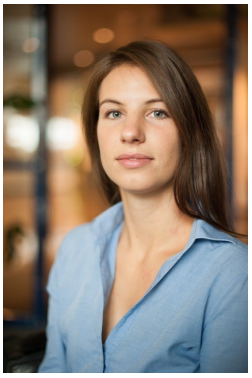
Figure 1: Diagram: Chairs, Professorships and Institutions of the WIAI Faculty (For Details see http://www.uni-bamberg.de/en/wiai/subject-groups/)

2.1 Women's Equal Opportunities Officer of the WIAI Faculty

The women's equal opportunities officer is the first contact point for suggestions, complaints or questions concerning women-specific affairs in the faculty WIAI. At the WIAI you can join a network of students and lecturers who provide information on special offerings for women in informatics, regular meetings and company field trips. Furthermore, the women's equal opportunities officer is active in the university-wide panel for a family friendly university and organizes computer science workshops for girls at schools. More information can be found at https://www.uni-bamberg.de/en/wiai/gremien/womens-commisioner/.

Women's Equal Opportunities Officer:
Caroline Oehlhorn
☎ Telephone: 0951/863-2879
Office: WE5/04.035
✉ wiai.frauenbeauftragte@uni-bamberg.de

Assistant Women's Equal Opportunities Officers:
Professor Dr. Ute Schmid
Professor Dr. Daniela Nicklas



3 International Software Systems Science (ISoSySc)

Software is the driving fabric behind many of the technological advances that enrich our every-day lives at home, at work and in public. Software arises from human imagination and creativity and there seems hardly a limit to what software can achieve. Yet, software is also a serious engineering enterprise. More and more important tasks in government administration, industrial production, health care, public transport, etc., are put into the "digital hands" of mobile and networked computer systems. The underlying software must be extremely reliable and constructed according to the highest standards. Meeting the demands on safety and robustness cleverly is both exciting and a challenge as distributed software is becoming increasingly complex. The power to design such software for the next generations comes equally from the creativity for discovering unconventional solutions and the mastership of advanced professional techniques and methodologies that are scientifically grounded in a system-oriented perspective.

You have completed an undergraduate degree in Computer Science or a closely related area and wish to prepare yourself solidly for a career in the software industry or software research. Then our new masters degree programme is right for you. The degree programme in International Software Systems Science (ISoSySc) enables you to specialize in all tasks needed for analysing, designing and developing large, networked software systems with innovative methods. The programme is informed by current trends in industry and research, and relays advanced knowledge in the architecture, development and analysis of modern software by teaching state-of-the-art techniques and methods in complex software engineering for distributed and mobile software systems.

Through your choice of elective modules you can put special emphasis on the following *focal areas*:

S1 Distributed and Mobile Systems,
S2 Software Analysis and Verification,
S3 Service-oriented Architectures or
S4 Networked Systems and Communication Protocols

Student projects and a study period abroad or an industrial internship broaden your perspective, strengthen your team aptitude and help you gain valuable experience. This will equip you with all skills and knowledge necessary to succeed as a highly valued software expert in the dynamic and future-proof IT industry, or as a skilled researcher in international laboratories at industry or university. Since all teaching is delivered in English this is your springboard for a career in the globalized economy.

4 ISoSySc Studies and Exam System

4.1 General Information

You will find important information on the master's degree programme International Software Systems Science in the following documents:

- **Study and Subject Examination Regulations (StuFPO[2])** for the ISoSySc master's degree programme
- **General Examination Regulations (APO[3])** applicable to all bachelor's and master's degree programmes of the WIAI Faculty
- **Module Handbook (MHB)** for the ISoSySc master's degree programme containing the module tables and list of available course offerings.

These documents can be found on ↗ http://www.uni-bamberg.de/en/ma-isosysc/regulations-documents/ as PDF files.

➽ **Please note:** Although the information given in this brochure is produced with care it is not legally binding. It does not replace the careful study of the aforementioned official regulatory documents. Wherever there is an English version available the German original is the legally binding text.

The Masters degree programme International Software Systems Science can be studied as a full-time or part-time course. The documents above and the subsequent explanations apply to the full-time studies. For part-time studies there are additional regulations which can be found here: ↗ http://www.uni-bamberg.de/en/ma-isosysc/part-time-studies/.

Up-to-date information on the available teaching modules, their dates and venues, as well as detailed instructions and teaching materials for the current semester can be found here:

- the lecture database *"Vorlesungsverzeichnis"* in the **UnivIS online information** pages (see Sec. 5.1) ↗ http://univis.uni-bamberg.de/, and the
- **Virtual Campus** at ↗ https://vc.uni-bamberg.de/moodle/index.php?lang=en where you can also register for your selected modules.

See also Sec. 5. If you have any questions, please do not hesitate to contact the programme study advisor as named in the following Section 4.2.

Apart from the modules' individual web pages there are other useful general courses you should register with on the Virtual Campus. Specifically, you will receive news and

[2] StuFPO is an abbreviation for the German name of these regulations, *"Studien- und Fachprüfungsordnung"*
[3] APO is an abbreviation for *"Allgemeine Prüfungsordnung"*

announcements concerning the degree programme and examinations via the following two information forums:

- General information forum of the degree examination board for Applied Computer Science, Computer Science and Computing in the Humanities: ↗ https://vc.uni-bamberg.de/moodle/course/view.php?id=972
- Joint **SoSySc Information Forum** for the BSc and MSc degree programmes in Software Systems Science: ↗ https://vc.uni-bamberg.de/moodle/course/view.php?id=960

You can also post questions in the forums. See also Sec. 6.2.

➽ **Please note:** The information forum of the examination board serves all degree programmes and will issue information mostly in German. However, the relevant advice will also be repeated on the SoSySc Information Forum.

4.2 Programme Advisory Service

If you have questions about your studies do not hesitate to contact the Degree Programme Advisory Service:

Programme Study Advisor: Aboubakr El Hacen Benabbas

☎ Phone:	0951/863-3672
Office:	WE5/05.129
Office Hours:	By Arrangement

Please send a short notice if you are planning on stopping by:
✉ studienberatung.ma-isosysc@uni-bamberg.de

4.3 Duration of Studies

The master's degree has a regular duration of four semesters (see StuFPO § 30 Paragraph 1) for acquiring the master's degree. To allow for individual variations, you can extend the duration of your studies up to a maximum of six semesters (see StuFPO § 30 Paragraph 2).

4.4 Teaching Periods

The teaching periods during the next two semesters are:

- Summer Semester: April 09, 2018 – July 14, 2018
- Winter Semester: October 15, 2018 – February 9, 2019.

The Christmas break is between December 24, 2018 – January 6, 2019. For information on bank holidays (in German: "*vorlesungsfreie Tage*") please see the university's web page at ➚ http://www.uni-bamberg.de/studium/im-studium/vorlesungszeiten/ (German only).

4.5 European Credit Transfer and Accumulation System (ECTS)

The degree programme is delivered through individually examined teaching modules. Each teaching module has an associated workload measured in credit points in line with the **ECTS** (European Credit Transfer System). It measures the average total workload in hours that is typically needed to complete a module. You should consider this when planning your study schedule for a semester. A module with more ECTS points normally also means a higher workload on your side:

- 1 ECTS = 25-30 hrs total student workload (all inclusive)
- 30 ECTS = 750-900 hrs total module load per semester
- 6 ECTS = 150-180 hrs for a standard course module of 4 contact hrs/week, combining lectures+tutorials

The full degree programme has 120 ECTS credit points.

ECTS points are granted for successfully passing the examinations of a module. The module handbook describes what the examination consists of and what the minimum requirements are to pass (possibly different parts of) the exam, see Sec. 4.6 below. The ECTS credit points are also used as an arithmetic weight by which the module grade influences the final cumulative grade of your degree.

➽ **Please note:** In order to complete your studies in the nominal period of 2 years you must attend 30 ECTS worth of modules each semester on average. Also, you must have achieved a minimum of 60 ECTS credit points before you are permitted to start work on your master's thesis (see StuFPO § 33, Paragraph 4).

4.6 Teaching Format and Assessment

Modules have different teaching formats and teaching events (lecture, tutorial, lab session, seminar, block course, excursion, ...) and there are different forms of assessment (oral exam, written exam, open book assignment, written essay, colloquium, presentation, ...) Exactly which kind of teaching events and form of assessment applies for a module is determined by the module lecturer. Details can be found in the module handbook.

The duration of a teaching event is normally given in **contact hours** per week, abbreviated "**SWS**" (German for *"Semesterwochenstunden"*). In general, 1 SWS corresponds to a 45 minute lesson per week during the semester period of typically 14 weeks. The time for preparation and revision work is not included in the SWS count.

4.6.1 Teaching Format

The following is a list of the main types of teaching events you will experience:

Lectures. Lectures serve as an introduction to the topic of a single module and convey the basic terms and approaches of the field. Also they are meant to give a systematic overview over the subject. The number of participants is not limited.

Tutorials. In tutorials the material covered in the lectures is fleshed out in more detail. Relevant methodical and technical skills can be acquired and intensified by practising on concrete tasks or case studies. The number of participants may be limited due to restrictions in room size and/or lab equipment. Also, tutorials may require submission of solutions to homework assignments and/or presentation of solutions in class.

Seminars. Seminars are courses where specific questions of the different subdomains of Software Systems Science are extended and discussed. In seminars you deepen your knowledge about a specific topic by independent research and by compiling a scientific essay (*Hausarbeit*) based on your findings. Normally, students are also expected to give an oral presentation (*Referat*). The number of participants is typically limited.

Projects. In projects you can apply and intensify your acquired knowledge and skills in a field of your choice. This normally involves a practical task that is solved by yourself or as a group work. It is documented in a project report (*Hausarbeit*) and presented in a project presentation (*Kolloquium*). Your work may be graded on an individual basis or for the group as a whole. This will be determined by the lecturer.

➽ **Please note:** With few exceptions (notably, seminars and project meetings), there is no formal requirement for attendance. Often lecturers do not check attendance. This gives you considerable freedom but also great **personal responsibility** to ensure your learning progress. You are expected to follow the topics covered in class continuously, prepare yourself before the classes and revise the material carefully at home. In particular, before class you are expected to consolidate your knowledge by reading up in the relevant text books as indicated by the lecturer. These **private studies** are an integral part of every module in the research-led ISoSySc master's level programme.

4.6.2 Assessment

The course assessment is mostly carried out through written or oral exams, homework assignments, project deliverables, written essays and lab practicals. Combinations of these forms of assessment are also possible. The precise form of the examination and the relative weighing of the grades obtained from these parts are up to the discretion of the course lecturer. However, they are specified in the module handbook.

Final written exams are usually held immediately after the end of the semester, i.e. February/March for the winter semester and end of July/August for the summer semester. Be aware that there are **firm deadlines for exam registration** some time after the first half of each semester. You can find more information below in Sec. 4.7.

In some modules it is possible to gain bonus points for the exam by completing optional homework assignments during the semester.

➽ **Please note:** Most modules are normally delivered **either** in the winter **or** in the summer semester. Few modules, such as projects and seminars are offered in the winter **and** in summer semester. Exams are generally offered each semester. This means that

- ... if you **miss** a module in one semester you may have to wait one year before you can **attend** it next time. However,
- ... if you **fail** a module in one semester you can **resit the exam** in the following semester. You can register for the exam only and do not need to attend the module classes a second time.

4.7 Flexible Exam System

Every module is assessed through one or more exams as described in the associated module handbook entry for the module. There could be a written or oral exam, the writing of a term paper, a presentation, colloquium or a combination thereof. In case of a combination, the module handbook specifies the relative weight of each component.

The different forms of assessment are described in the General Examination Regulations APO § 9 Paragraph 2.

Passing the exam(s) of a module is the prerequisite for acquiring the associated ECTS credit points.

4.7.1 Examination Dates

The exams are linked to modules and take place after the end of every semester, i.e., in February/March for the winter semester and July/August for the summer semester. Most module exams can be taken during the exam period of every semester, whether or not the module is delivered during that semester.

There is no formal requirement that you must take the exam(s) during the semester in which you attend the module. You can decide every semester for which exams you want to register, see Secs. 4.7.3 and 4.7.5 below.

➽ **Please note:** Although this gives you the freedom to create your individual study and exam plan, you are strongly advised to **take the exam(s) immediately**. If you fail you can

resit the exam during the exam period of the following semester. You can retry an exam as often as necessary **but only within the limits of the maximum 3 year study period**.

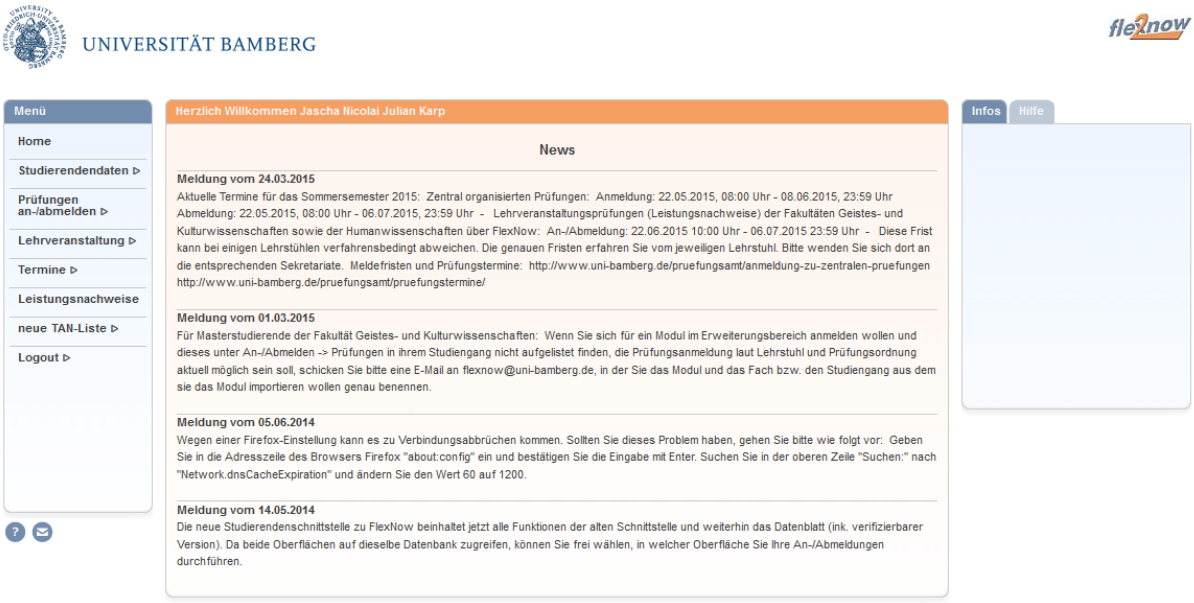
4.7.2 Optional Assignments "Bonus Points"

In some modules you can solve optional assignments during the semester to gain bonus points in order to improve your exam grade. However, you must pass the exam all by itself for the bonus points to be added to your credit. You will find out from the course web page or during the first lectures of a module if there are such optional assignments.

4.7.3 Registration and Deregistration for the Exams

You must register for your exams via the electronical exam administration tool of the University of Bamberg, called **FlexNow2**. You can reach it via:

↗ https://fn2stud.zuv.uni-bamberg.de/FN2AUTH/FN2AuthServlet?op=Login.



FlexNow2 – The online exam administration tool of the University of Bamberg.

With your student registration you should have received the necessary access credentials (ba-identification, password) as well as your transaction numbers (TANs). You can find a detailed documentation on the FlexNow2 website. The website is currently in German but will be available in English in due course. If you encounter problems with the registration please contact the examination office:

Ms. Heike Schick	Office K25/01.20
☎ Phone: 863-1037	
✉ wiai-pruefungen@uni-bamberg.de	
Office Hours:	
Mo – Fr	10:00 – 12:00 AM
Mo	13:30 – 15:00 PM

Alternatively, feel free to ask the ISoSySc programme study advisor (see Sec. 4.2). They will be happy to give you a hand with your exam registration.

➽ **Please note:** Be sure that you do not miss the **exam registration deadlines** when planning to register for your exams. The registration period is announced by an email, on the homepage of the examination board and through the SoSySc Information Forum on the Virtual Campus (see Sec. 4.1). It is usually quite early in the semester, so be sure to pay attention to it. **In case of doubt, ask your class mates!**

It is also possible to **deregister from exams**. The cancellation period is normally starting shortly after the beginning of the registration period. After the end of the deregistration period there is no possibility to step back from an exam.

4.7.4 Oral Exams

Please note that oral exams require an additional appointment for the exam. Appointments can be made at the respective chairs, which provide the exam. In case you are sick, you can withdraw from the exam without failing. For that you need to get a sick note from a general physician at the day of the exam and submit it to the examiner.

4.7.5 Repetition of Exams

According to the General Examination Regulations APO § 11 Paragraph 3 it is possible to repeat a module exam that was failed. Module exams you passed cannot be repeated.

The resitting of a failed exam is only possible for the whole module exam (APO § 11 Paragraph 4, Clause 1). This means that if you fail just a part of the module, in case the module's assessment comprises several deliverables, you have to **repeat the whole module exam**, i.e., all exam parts. However, optional assignments are transferred for the next exam grade, provided you retake the module exam in the immediately following exam period within the regular cycle (see APO § 11 Paragraph 4, Clause 2). After that, results from optional assignments expire as well.

The master's thesis can only be repeated once according to APO § 18.

➽ **Please note:** The contents of a module exam are always based on the topics presented in the classes during the last time the module was regularly offered. So, if you do not take the exam immediately at the end of the semester, you may find the lecturer of a class has changed some of the contents of the course. This means you need to prepare different topics for the exam the next time round. In this case, check with the respective lecturer, so you know what is expected!

4.8 Example Module Description

Now that you know about the most important terms and regulations, here is a short example of a module description as you will find it in the module handbook:

Module SWT-ASV-M Applied Software Verification *Applied Software Verification*		6 ECTS / 180 h
Version 3.0.0 (since WS14/15) Person responsible for module: Prof. Dr. Gerald Lüttgen		
Contents: This module focuses on the increasingly important field of automated software verification, which aims at increasing the quality of today's complex computer systems. Students will be introduced to modern automated software verification and, in particular, to software model checking, and will be familiarised with a variety of important formal verification concepts, techniques and algorithms, as well as with state-of-the-art verification tools.		
Learning outcomes: On completion of this module, students will be able to thoroughly analyse software using modern software verification tools and understand the state-of-the-art techniques and algorithms that drive cutting-edge development environments offered by major software companies.		
Remark: The main language of instruction is English. The lectures and practicals may be delivered in German if all participating students are fluent in German. The total workload of 180 hrs. is split approximately as follows: • 30 hrs. attending lectures (Vorlesungen) • 30 hrs. attending practicals (Übungen) • 60 hrs. preparing and reviewing the lectures and practicals, including researching literature, studying material from additional sources and applying software tools • 30 hrs. working on the assignment (Hausarbeit) • 30 hrs. preparing for the colloquium (Kolloquium)		
Recommended prior knowledge: Basic knowledge in algorithms and data structures, mathematical logic and theoretical computer science. Knowledge of the module "Foundations of Software Analysis" (SWT-FSA-B) - or equivalent - is desirable.		**Admission requirements:** Compare regulations governing examinations (Studien- und Fachprüfungsordnung)
Frequency: every summer semester	**Recommended semester:**	**Minimal Duration of the Module:** 1 Semester

Module Units	
1. Lectures in Applied Software Verification1 **Mode of Delivery:** Lectures **Lecturers:** Prof. Dr. Gerald Lüttgen **Language:** English/German	2,00 Weekly Contact Hours
Contents: The lectures (Vorlesungen) will address the following topics in automated software verification: (i) state machines, assertions and algorithms for state space exploration; (ii) temporal logics for specifying program properties; (iii) model checking using binary decision diagrams; (iv) SAT-based bounded model checking; (v) software model checking based on decision procedures; (vi)	

abstraction-based software model checking. In addition, several state-of-the-art software verification tools will be introduced. **Literature:** • Baier, C., Katoen, J.-P. Principles of Model Checking. MIT Press, 2008. • Clarke, E., Grumberg, O. and Peled, D. Model Checking. MIT Press, 1999. • Huth, M. and Ryan, M. Logic in Computer Science. 2nd ed. Cambridge University Press, 2004. • Kroening, D. and Strichman, O. Decision Procedures: An Algorithmic Point of View. Springer, 2008. • Loeckx, J. and Sieber, K. The Foundations of Program Verification. 2nd ed. Wiley, 1987.	
2. Practicals in Applied Software Verification2 **Mode of Delivery:** Practicals **Lecturers:** Scientific Staff Praktische Informatik, insbesondere Softwaretechnik und Programmiersprachen **Language:** English/German **Contents:** Students will practice the various theoretical and practical concepts taught in the lectures (Vorlesungen) by applying them to solve verification problems using several modern model-checking tools, and also by engaging in pen-and-paper exercises. Emphasis will be put on presenting and discussing the solutions to the exercises by and among the students, within the timetabled practicals (Übungen). **Literature:** - see the corresponding lectures -	2,00 Weekly Contact Hours

Examination Coursework Assignment and Colloquium / Duration of Examination: 20 minutes Duration of Coursework: 3 weeks **Description:** Assignment (Hausarbeit) consisting of questions that practice, review and deepen the knowledge transferred in the lectures and practicals (Vorlesungen und Übungen). Colloquium (Kolloquium) consisting of questions testing the knowledge transferred in the lectures and practicals (Vorlesungen und Übungen), on the basis of the submitted solutions to the assignment (Hausarbeit).	

Terminology:

- WS = Winter Semester, SS = Summer Semester
- SWS = weekly contact hours, 1 SWS = 45 mins

4.9 Structure of the ISoSySc Masters Degree Programme

The following gives you an idea of the overall structure of the degree programme. Please consult the web pages ↗ http://www.uni-bamberg.de/en/ma-isosysc/. Also, follow the SoSySc Information Forum on the Virtual Campus (see Sec. 4.1) regularly, for further **up-to-date information**.

4.9.1 Module Groups

The ISoSySc masters studies are structured into five thematic module groups, each of which specifies a range of electives from which you select to define your personal study path. The module groups, named A1–A5, are described in attachment 1 of the study and examination regulation (StuFPO) for the ISoSySc master's degree and on the web page ➚ http://www.uni-bamberg.de/en/ma-isosysc/structure-and-curriculum/:

A1 Software Systems Science [30-48 ECTS]: In this module group you choose 30-48 ECTS from the advanced-level modules in foundations of computer science, communication systems and computer networks, mobile software systems, software technology and programming languages as well as distributed systems and security and privacy.

A2 Domain-specific Software Systems Science [0-18 ECTS]: This module group comprises 0-18 ECTS of optional advanced-level modules from applied fields of computer science related to Software Systems Science such as IT management, energy efficient systems, smart environments, human-computer interaction, cognitive systems, computing in the cultural sciences and social networks. The available offerings may change from one year to the next.

A3 Seminar and Project [12 ECTS]: In this module group you will attend a seminar and run a project to deepen your understanding of the topics covered by the module groups A1 and A2.

A4 Master's Thesis [30 ECTS] In the master's thesis you conduct independent research leading to a written dissertation on some advanced topic in an area related to Software Systems Science. This individual work is supervised and guided by a member of the faculty's academic staff.

A5 International Experience [30 ECTS] Here you get the opportunity to enrich your studies through a distinctively international academic or industrial experience.

You find a list of the available modules within these different module groups in the module handbook which is published before the beginning of every winter semester. It is valid for one academic year. The current version of the module handbook can be found at:

➚ http://www.uni-bamberg.de/en/ma-isosysc/regulations-documents/

You have also the possibility to take up to 18 ECTS in foreign languages. More information about the language offerings can be found in the languages section.

The sum of the credit points to be acquired, including the master's thesis, is 120 ECTS. This means that if you cover an average amount of 30 ECTS points per semester, you can complete within the regular study duration of 4 Semesters as stated in Sec. 4.3.

In the following you find the current list of modules offered within the different module groups for the academic year 2017-2018. The choices may change during the 2018-2019 academic year.

4.9.2 Module Group A1 – Software Systems Science [30-48 ECTS]

Abbreviation	Name	Sem.	ECTS	Req.[4]
DSG-DSAM-M	Distributed Systems Architecture and Middleware	WS	6	DSG-EiDistrSys
DSG-IDistrSys	Introduction to Distributed Systems	SS	6	DSG-EiAPS-B DSG-EiRBS-B DSG-PKS-B
DSG-SOA-M	Service-Oriented Architecture and WebServices	SS	6	DSG-EiDistrSys
DSG-SRDS-M	Selected Readings in Distributed Systems	WS, SS	3	DSG-EiDistrSys
GdI-AFP-M	Advanced Functional Programming	SS	6	DSG-EiAPS-B DSG-EiRBS-B GdI-GTI-B GdI-MfI-1
GdI-IFP	Introduction to Functional Programming	WS	6	DSG-EiAPS-B DSG-EiRBS-B GdI-GTI-B GdI-MfI-1
GdI-MTL	Modal and Temporal Logic	WS	6	GdI-MfI-1 DSG-EiAPS-B DSG-EiRBS-B
KTR-GIK-M	Foundations of Internet Communication	SS	6	KTR-Datkomm-B MI-AuD-B DSG-EiAPS-B
KTR-MAKV-M	Modelling and Analysis of Communication Networks and Distributed Systems	SS	6	GdI-MfI-1 KTR-MfI-2 Stat-B-01 Stat-B-02
KTR-MMK-M	Multimedia Communication in High Speed Networks	SS	6	KTR-Datkomm-B
KTR-Mobi-M	Mobile Communication	WS	6	KTR-Datkomm-B MI-AuD-B
MOBI-DSC-M	Data Streams and Complex Event Processing	WS	6	SEDA-DMS-B
MOBI-SDA-M	Stream Data Analytics	SS	6	SEDA-DMS-B MOBI-DSC
MOBI-ADM-M	Advanced Data Management	SS	6	SEDA-DMS-B
SWT-ASV-M	Applied Software Verification	SS	6	SWT-FSA-B
SWT-PCC-M	Principles of Compiler Construction	WS	6	MI-AuD-B GdI-GTI-B
PSI-AdvaSP-M	Advanced Information Security and Privacy	SS	6	PSI-IntroSP-B

[4] Recommended prerequisites for students continuing on from the BSc SoSySc.

4.9.3 Module Group A2 – Domain-specific Software Systems Science [0–18 ECTS]

Abbreviation	Name	Sem.	ECTS	Req.[4]
EESYS-ES1-M	Energy Efficient Systems I	SS	6	–
EESYS-DAE-M	Data Analytics in Energy Informatics	WS	6	–
HCI-MCI-M	Human-Computer-Interaction	SS	6	DSG-EiAPS-B DSG-EiRBS-B MI-AuD-B
HCI-US	Ubiquitous Systems	WS	6	DSG-EiAPS-B DSG-EiRBS-B MI-AuD-B
ISDL-SOA	SOA-Governance and Evaluation	WS	3	–
KInf-SemInf-M	Semantic Information Processing	WS	6	–
KogSys-KogMod-M	Cognitive Modeling	WS	6	KogSys-IA-B
KogSys-ML-M	Machine Learning	WS	6	GdI-MfI-1 MI-AuD-B
SME-STE-M	Introduction to Knowledge Representation: Space, Time, Events	WS	6	–
SNA-OSN-M	Project Online Social Networks	WS	6	SNA-ASN-M SNA-NET-M

Since some courses might require background, which you are missing, you can catch up by attending a bachelor course. The StuFPO (Study and Subject Examination Regulations) stipulates in § 40 Paragraph 5 that **up to 12 ECTS** can be taken from bachelor modules. If you wish to take this option you have to file an application with the degree programme representative in which you must provide evidence that the contents of the requested bachlor module

1. are not yet covered by your completed BSc degree (e.g. add your BSc transcript)
2. are a prerequesite for some master's module (e.g. add statement from the module lecturer).

4.9.4 Module Group A3 – Seminar & Projects [12 ECTS]

Abbreviation	Name	Sem.	ECTS	Req.[4]
Seminars (generic)			3	
SSS-SEM-M	Master-Level Seminar in Software Systems Science (generic)	WS, SS	3	–
Projects			9	
MOBI-PRS-M	Master Project Mobile Software Systems (SoSySc)	SS	9	SEDA-DMS-B
DSG-Project-M	Distributed Systems Project	WS, SS	9	DSG-EiDistrSys
SWT-PR2-M	SWT Masters Project in Software Systems Science	SS	9	–
KTR-SSSProj-M	KTR Master Project Software Systems Science	WS, SS	9	DSG-PKS-B KTR-Datkomm-B KTR-MfI-2 SWT-SWL-B
PSI-ProjectSP-M	Project Security and Privacy	SS	9	–

Master seminars are offered every semester, by faculty's different research groups in Computer Science, Applied Computer Science and Information Systems. You are free to chose from this selection any seminar provided it is related to Software Systems Science and applies and/or deepens the knowledge gained from the module groups A1 and A2.

Please contact the lecturers (or secretary) of the research groups for available seminars and projects, or check the module lists *"Vorlesungsverzeichnis"* at the UnivIS online information pages (see Sec. 5.1) ↗ http://univis.uni-bamberg.de/.

➽ **Please note:** In contrast to most other teaching modules you will have to **register** for attending a seminar or a project. There may be class size restrictions and also compulsory attendance. Seminars and projects may run on a regular (e.g., a weekly or bi-weekly) schedule or they may be organised as a block seminar (a fixed number of full-day sessions). Make sure to find out about the detailed teaching format as early as possible. Sometimes the seminar and project topics are allocated already at the end of the semester prior to the semester in which the module is scheduled.

4.9.5 Module Group A4 – Master's Thesis [30 ECTS]

Through the independent research and writing of the master's thesis you will demonstrate your ability to apply your knowledge and technical skills acquired to solve a well-defined specific topic in the area of Software Systems Science using scientific methods.

The topics are typically issued by the WIAI research groups, professors and lecturers, on their web pages, notice boards or during their classes. You may also suggest a topic by yourself, according to your personal interests and specific background. In any case, you

must find a member of staff to act as your supervisor for the thesis. Please contact the appropriate member of staff to agree on a suitable topic. You will normally choose your supervisor among the academic members of staff within the Computer Science Section of in the WIAI. You may also approach professors from other sections, such as Applied Computer Sciences or Information Systems. However, the topic must fall within the field of Software Systems Science.

Before starting on the master's thesis you must register it with the University Examining Board (*Prüfungsamt*), by filling in a form which fixes the working title of the proposed thesis, the name and signature of the supervisor and the date of commencement. The alotted overall working period is **6 months**.

Remember that you must have acquired at least 60 ECTS credit points before being admitted for the Master's Thesis. The mark of the thesis enters with a weight of 30 ECTS credit points into your final cumulative grade.

4.9.6 Module Group A5 – International Experience [30 ECTS]

Here you get the opportunity to enrich your studies through a distinctively international academic or industrial experience. You can do this at three levels of "ambition":

- Full Study Abroad:

  You spend at least one semester as study time abroad, for instance, at one of our partner universities. There you may select study abroad modules from the graduate level offerings of the partner institution. It is necessary that the topics fall within the area of Software Systems Science and are pre-arranged through a learning agreement. The total amount of credit points obtained abroad should be at least 30 ECTS.

- International Experience:

  What if you cannot bring home the required 30 ECTS from abroad or simply do not want to study abroad? Then you have the option of accomplishing an internship in an international context, preferrably abroad, that covers topics of the occupational field of Software Systems Science. This internship must have a volume of at least 12 ECTS credit points, corresponding to 360 working hours in a foreign or internationally acting domestic company or research institute.

The detailed regulations are described in the StuFPO (English translation available) and in the module handbook (in English). For further advice you may contact the degree programme advisor (Sec. 4.2) as well as the Faculty's Career and International Center, see Sec. 8.1.

➽ **Please note:** If you plan to study abroad it is crucial that you start planning immediately at the beginning of your first semester at Bamberg. The **deadline** for application to the exchange programmes of Bamberg University are **end of November** each year, to go abroad in the following year. (See also Sec. 7.1)

5 Creating a Timetable

Since the ISoSySc degree programme offers many individual choices, there is no fixed timetable or standard prescribed sequence of modules everyone has to take. Instead, you create your own personal timetable every semester within the options permitted by the MSc ISoSySc exam regulations. This section gives you the most important facts you need to know to build your timetable.

5.1 Sources of Information on Modules and Classes

In general, you can obtain all the information, such as the dates, times and venues of classes, information on the lecturer, the module content and teaching materials, from the following sources:

1. **Lecture database UnivIS**[5] (↗ http://univis.uni-bamberg.de)
2. **Virtual Campus** (↗ http://vc.uni-bamberg.de, see Sec. 6.2)
3. **Module websites** of the different teaching and research groups
4. **Notice boards and class announcements** by the different teaching and research groups.

The UnivIS online data base of the University of Bamberg.

The time designation in the module information is usually to be read as "*cum tempore*", abbreviated *"c.t."* – which is Latin for "with academic quarter". That means in effect that

[5] UnivIS stands for "University Information System."

a lecture with 2 SWS in the time slot between 2pm–4pm, or 14:00hrs–16:00hrs, starts at 14:15hrs and ends at 15:45hrs. Lectures stated to begin "*s.t.*" – *sine tempore*, Latin for "without time" – start sharp on the striking of the hour, i.e., commence 14:00hrs and end 15:30hrs.

Normally, the lecturer will announce the details on the organisation and delivery of the classes on the module's web page in the Virtual Campus and during the first session. Remember that for seminars and projects you may have to register. This will be specified in the information sources mentioned above.

Tutorials and workshops may be offered in several "duplicate" sessions per week. In this case you only need to attend one of the sessions that fits with your timetable.

In case of doubts, e.g., differing dates or rooms of a certain teaching event, the lecturer of the class or the secretary of the lecturer's research group is the right person to ask for clarification.

➽ **Please note:** Although there are mostly no attendance requirements on modules, this does not mean you may come and go as you like. Crashing in late and leaving early creates a disruption in the class that you should avoid for reasons of courtesy. A lecturer can refuse to let you join in after the class has started. If you do have an overlap between classes or unavoidable problems of reaching a class in time, please tell the lecturer at the beginning of the semester.

5.2 Personal Study Plan

At the beginning of every semester you create your personal study time table. It is your responsibility to select a suitable set of classes. In doing so you should consider the following:

- The timing of the classes must not overlap and leave sufficient room to move between different university premises if necessary;
- The selection of modules must satisfy the ISoSySc degree regulations;
- The total workload during the semester must be manageable.

To ensure you get this right you are strongly advised to make a **provisional study plan** for the full MSc study period during the first days of your studies. Present your study plan to the degree programme advisor (Sec. 4.2) and get it signed as a **learning agreement** (Sec. 5.3) between you and the degree examining board. **Update your study plan** regularly during the course of your studies and talk to the degree programme advisor every time you change your plan.

From the study plan you can create your timetable using the UnivIS (Fig. 5.1) and print it.

To give you an idea of what a study plan looks like we have filled in one example for you here. You can find more samples and further information on the MSc ISoSySc Web pages, see

↗http://www.uni-bamberg.de/en/ma-isosysc/regulations-documents/.

The study plan is designed for

- full-time study
- start of studies: summer semester
- international Experience
- specialisation area: Service-oriented Architectures (S3)

Table 5: Exemplary study plan starting in summer semester (see ↗ http://www.uni-bamberg.de/en/ma-isosysc/regulations-documents/

Sem.	Module	ECTS	SWS	Module Group	Focal areas
SS 2018	Foundations of Internet Communication	6	4	A1	S3, S4
	Human-Computer-Interaction	6	4	A2	S1, S3
	Modelling and Analysis of Communication Networks and Distributed Systems	6	4	A1(A5)	S1, S2, S4
	Advanced Data Management	6	4	A1	S1, S2, S4
	Introduction to Distributed Systems	6	4	A1	S1, S3, S4
Total 1. Semester		30	20		
WS 2018/19	SOA-Governance and Evoution	3	2	A2	S3
	Selected Readings in Distributed Systems	3	2	A1	S1, S3
	Semantic Information Processing	6	4	A2(A5)	S3, S4
	Modal and Temporal Logic	6	4	A1	S2
	Data Streams and Complex Event Processing	6	4	A1	S1, S4
	Principles of Compiler Construction	6	4	A1(A5)	S2
Total 2. Semester		30	20		
SS 2019	Service-oriented Architecture and Web Services	6	4	A1	S3
	Distributed Systems Project	9	-	A3	S3
	Master Seminar	3	2	A3	
	Internship (international context)	12	-	A5	
Total 3. Semester		30	ca. 20		
WS 2019/20	Master's Thesis	30	-	A5	
Total 4. Semester		30	ca. 20		
	total	120	ca. 80		

5.3 Learning Agreements

In the ISoSySc masters programme you may exercise considerable freedom as to which specific study path to take. There are many decisions you can make to personalise your studies. You can select your own electives within each of the module groups A1 and A2, determine the order in which you attend the classes and decide in module group A5 whether you want to study abroad or conduct an internship. If you study abroad you will have to select suitable modules at the partner university. If you go on an internship you must ensure that it has sufficient international context and the work you do has sufficient relevance for Software Systems Science.

This is why learning agreements are useful. These are formal written agreements between you and the degree examining board on the recognition of ECTS credit points which you intend to acquire as part of your degree studies. Learning agreements are meant to give you the extra peace of mind that the modules you plan to attend or the internship you intend to do are approved within the scope of the degree regulations.

➽ **Please Note:** Learning agreements are meant as a safety net and optional!

- You do not need to have a learning agreement to attend a module or take an exam.
- If you have a learning agreement for a particular module, then you are not forced to attend the module.
- Learning agreements can always be changed and you can have as many as you want.

Typically, learning agreements are entered before you leave for a study abroad period or start the internship. However, we strongly recommend that you also use a learning agreement to get the module selections in your study plan (Sec. 5.2) approved at the beginning of the first semester.

The procedure of entering a learning agreement differs depending on the kind of crediting. The learning agreement forms and an overview of the procedure can be found on the virtual campus web pages (log in with your student user account) of the degree examining board.

On the following two pages you can see an example of a study plan learning agreement. There are similar forms for learning agreements concerning internships and international studies abroad. The learning agreement forms can be obtained from the web page

➚ http://www.uni-bamberg.de/en/ma-isosysc/regulations-documents/

or the degree examining board's Virtual Campus announcement page

➚ https://vc.uni-bamberg.de/moodle/course/view.php?id=972.

The Faculty of Information Systems and Applied Computer Sciences WIAI

Learning Agreement (M.Sc. International Software Systems Science - ISoSySc)

Mrs./Mr. ....
Surname, First Name *enrollment number*

I hereby request approval for the overleaf/following study plan to satisfy the formal requirements of the Master's degree in International Software Systems Science as specified in section §40 of the degree regulations (StuFPO).
I am aware that this learning agreement does not bind me to attend the specified modules and that it can be changed at any time, subject to reapproval by the degree examining board.
I am also aware that separate learning agreements are required for internships and international studies abroad in module group A5, and that this additional learning agreement must submitted in the semester before the start of the internship or my departure for the studies abroad.

General structure of my personal study plan:

- full-time study ☐ part-time study ☐
- Start of studies: summer semester ☐ winter semester ☐
- Module Group A5:
  international internship ☐ international study abroad ☐
- Intended focal area(s) according to Section §36 StuFPO: (please specify)

  ……

Student's contact details:

.....
Zip Code, City

.....
Street, House number

.....
Phone *Email*

Figure 2: First page of the learning agreement form for a study plan.

The Faculty of Information Systems and Applied Computer Sciences WIAI

Proposed Study Plan

Semester	Module	ECTS	SWS	Module Group	Focal Areas
☐ WS ……. ☐ SS ……..					
	1st semester total				
☐ WS ……. ☐ SS ……..					
	2nd semester total				
☐ WS ……. ☐ SS ……..					
	3rd semester total				
☐ WS ……. ☐ SS ……..					
	4th semester total				
☐ WS ……. ☐ SS ……..					
	5th semester total				
☐ WS ……. ☐ SS ……..					
	6th semester total				
	total				

……..... ……. .....
Place, Date *Student's Signature*

Approved by the MSc ISoSySc Examining Board

....
Place, Date *Signature degree examining board*

Figure 3: Second page of the learning agreement form for a study plan.

6 eLearning

6.1 Virtuelle Hochschule Bayern

Like in every other degree programme, you have the possibility to attend additional modules provided by the platform called *Virtuelle Hochschule Bayern* (vhb). The vhb offers online multimedia lectures that have been compiled by several bavarian universities since May 2000. The offerings of the vhb currently comprise 13 subjects like computer science, culture studies, information systems or business and economic science. Providers and organisers of the respective lectures are the participating universities or lecturers who submit virtual course offerings. **In some cases an online lecture of the vhb can be credited instead of courses that are conducted at the University of Bamberg.** Please contact your examination board if you have further questions regarding the crediting of the vhb courses.

Further information regarding the available modules of the vhb can be found at the official website of the *Virtuelle Hochschule Bayern*:

http://www.vhb.org/en

6.2 Virtual Campus

Most of the lecturers at the University of Bamberg upload their module descriptions and class materials to the Virtual Campus (VC) http://vc.uni-bamberg.de. The VC also provides both module-related and general news/discussion forums.

Having logged in with your ba-identification, you will have access to all the VC-courses that are offered in the current semester. For some closed-group VC courses you first have to get in contact with the moderator, who can provide you with an access keyword. Beside the VC courses associated with the modules you attend, we recommend you register for the following courses right at the beginning of your studies:

1. "'**Informationen des Prüfungsausschusses AI**"'
   http://vc.uni-bamberg.de/moodle/course/view.php?id=972
2. "'**Diskussionsforum zum Master ISoSySc**"'
   http://vc.uni-bamberg.de/moodle/course/view.php?id=960.

It is through these news forums that we can inform you about interesting events and remind you about important regulations concerning the MSc ISoSySc degree programme.

7 Languages

The Language Center offers a range of language courses for students from all faculties. You find all the information on their website: https://www.uni-bamberg.de/sz/ (German).

Among others, there is also a course for German as a foreign language. You can access information about this course by following this link: https://www.uni-bamberg.de/en/sz/study/sprach-und-kursangebot/angebot-sprachausbildungkurse/allgemeinsprachliche-kurse/kurse-fuer-auslaendische-studierende-daf/ (German).

7.1 Registration

For most of the language courses you have to register online via FlexNow2. The registration normally starts four weeks before the start of the semester and lasts six weeks. Please register via FlexNow2: https://fn2stud.zuv.uni-bamberg.de/FN2AUTH/FN2AuthServlet?op=Login.

8 Internship / Graduate Study Abroad

8.1 Career & International Center

The Career & International Center offers information regarding career/internships and gives advice on the study abroad programmes of Bamberg University. Thus, it is your prime contact for implementing your studies in the A5 module group. In particular, it may help with international internships in Germany and abroad, job offers for graduates as well as information events and work-oriented advanced training.

Contact person:	Dr. Laura-Christiane Folter
☎ Phone:	863-2977
Office:	WE5/01.019
Office Hours:	only by prior arrangement

Please send a short notice before you stop by: ✉ careercenter.wiai@uni-bamberg.de

You can find links to interesting job fairs or recommended literature about the topic application on the web page https://www.uni-bamberg.de/en/wiai/career-center/. In the virtual campus (VC) of the university you can find information on recent job offers, internships or other company events in the course "*Jobbörse WIAI*".

8.2 International Affairs Representative

Please contact the Career & International Center (Sec. 8.1) for special study-specific or organisational questions about planning and realising a study abroad period within the A5 module group. In the Virtual Campus course “Studium International WIAI” you can find detailed information on the topic “International Studies”.

If you need further help or general advice, you can contact the International Affairs Representative of the WIAI Faculty:

Prof. Michael Mendler, PhD
Professur für Grundlagen der Informatik

☎ Phone:	0951/863-2828
Office:	WE5/05.041
Office Hours:	prearranged

Please send an email to arrange a meeting: ✉ michael.mendler@uni-bamberg.de

9 PC-Pools & icprint

Students have access to PCs and the software installed on them at the different locations of the university.

9.1 Finding PC-Pools

At the ERBA you find PCs at the rooms WE5/01.003; WE5/02.005; WE5/04.014 (see the plan of the building on 36). A register with all PC-Pools and the particular software configuration can be accessed at http://www.uni-bamberg.de/rz/pc-pools/. You also have WLAN-Access in all of the PC-Pools (see subsection 10.2).

9.2 Rules of conduct for PC-Pools

When you login you will agree on the policies for information systems at the University of Bamberg. You can find the policies in the computing center (Rechenzentrum) and in all PC pools. Also the policies are published in the internet at http://www.uni-bamberg.de/fileadmin/rz/allgemeines/Nutzungsregelungen-PC-Pools.pdf. The times that you can access the PC pools are limited to the opening hours of the respective building. Lectures and lab classes that are conducted in the PC pools have priority over personal use. (Lectures are announced on the displays at the entrance of the computing center and the ERBA building). Students that do not attend the lecture or lab class should be prepared early enough to finish their work with the computer to make space for the students who are going to attend the lecture. This should be also done even if there are more computers than students attending the lecture. Please also leave the PC pool if a lecturer or a janitor ask you to do so.

9.3 icprint - Central print and scanservice

Printers connected to icprint are accessible via network as printer, copier and scanner at several locations. For fetching printouts and for scanning you need your student ID card. The icprint-LoginApp which is needed for printing is installed by default on all computers in the PC-Pools. You are logged in by default. Via icprint.uni-bamberg.de you can access your scanned documents.

10 Internet access for students

10.1 ba-identification

The so called ba-identification you received with your matriculation at the students' office of the registrar, in combination with your password, grants you access to various online services of the University of Bamberg (e.g. VC, FlexNow2, "online services" or Office365, Access to computers in the PC Pools, VPN-connection). The identification starts with the letters "ba" followed by a six digit number. If you forget your password please contact the IT-Support of the "Rechenzentrum" (computing center) room RZ/00.13, Phone +49 951 863 1333 (You will need your student ID card).

10.2 Internet access in buildings of the University of Bamberg

All lecture rooms, seminar rooms and important lounge areas (including canteens and libraries) are provided with WiFi-Access-Points. Use the SSID "eduroam" to access WiFi at the university of Bamberg. Via this eduroam-account you can access WiFi also at other universities which participate in the eduroam-project. You find more information at http:/www.uni-bamberg.de/rz/eduroam/ about setting up eduroam.
Important: When accessing WiFi in the eduroam-network please use your account where the username is **ba-identification@uni-bamberg.de** and the corresponding password.

10.2.1 VPN-connection: Accessing university network from outside

To access the internal university network from elsewhere you have to establish a so called VPN-Connection. You need this for some specific library services (like E-Books) and for accessing the file server. For login you need your personal ba-number and the corresponding password. Details and information are provided on the following website:

http://www.uni-bamberg.de/rz/vpn

10.3 Further services / Offers from RZ

Further instructions: http://www.uni-bamberg.de/rz/anleitungen/
Information about Office365: http://www.uni-bamberg.de/rz/o365
Computer courses for students:
http://www.uni-bamberg.de/rz/dienstleistungen/kurse/computerkurse-fuer-studierende/

11 Fachschaftsvertretung WIAI

The students' representatives (*Fachschaftsvertretung WIAI*) represent all students of the WIAI faculty. Sending delegates to boards and committees at different levels of government of our university, we voice interest, wishes, and concerns of the students. We help you whenever there are any issues with the university adminsitration, professors or teaching staff. We also assist you in your studies by providing old exam papers, lecture notes, learning aids and the like.

Furthermore, we organize events that enrich student life at our faculty: the LaTeX-Workshop at the beginning of the semester, an excursion to the computer expo CeBIT, LAN parties, a barbecue in the summer, the faculty Christmas party, and last summer for the first time we had a formal dance.

In order to give you the best support possible, we need your help and your feedback. So come and talk to us whenever you encouter problems with your *Prüfungsordnung* or with the scheduling of your classes or if there are any other issues or troubles with your studies, with university life or with your stay in Bamberg. We can most likely help you sort things out or point out the appropriate people or places to turn to.

Take a look at our webpages for useful information about your studies and for announcements for our workshops and events. On the vitual campus join the course „Aktuelle Informationen der Fachschaft“ to stay up to date. For questions and suggestions send us an email at ✉ fachschaft.wiai@uni-bamberg.de or give us a call at ☎ 0951 / 863-1219. You are also very welcome to drop by our office in room WE5/02.104.

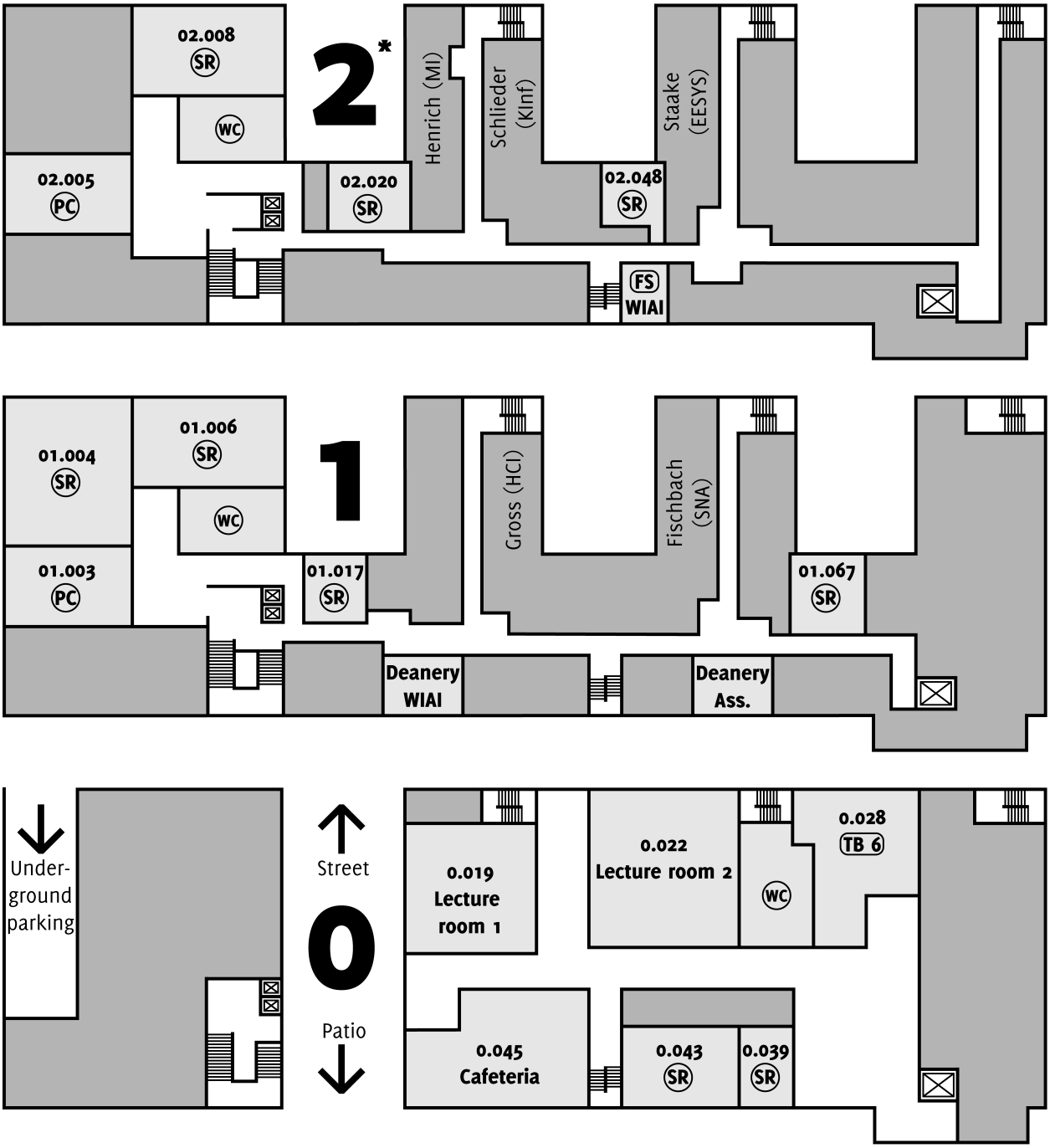
Would you like to join us, getting to know our faculty and university government or organizing events and workshops? Our meetings are open to the public and take place regularly every other week and our doors are (almost) always open.

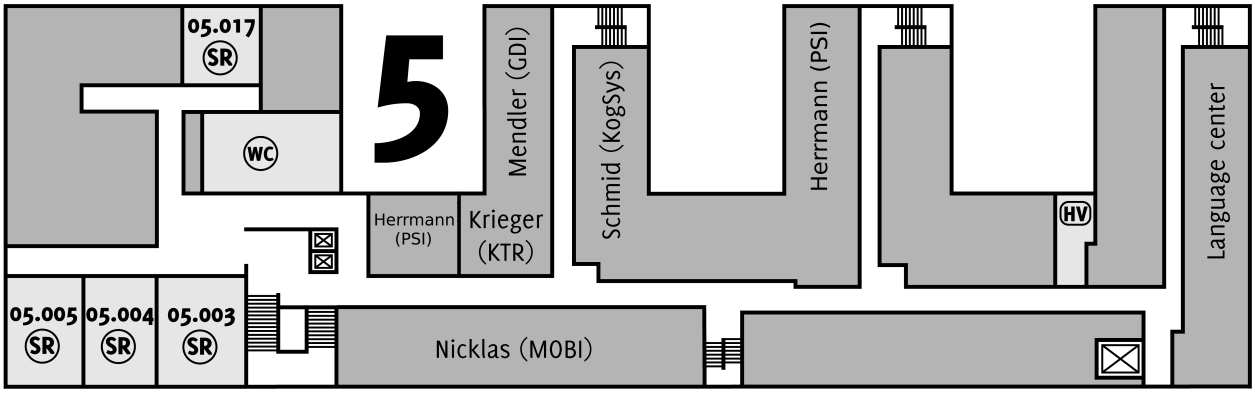
We look forward to meeting you!

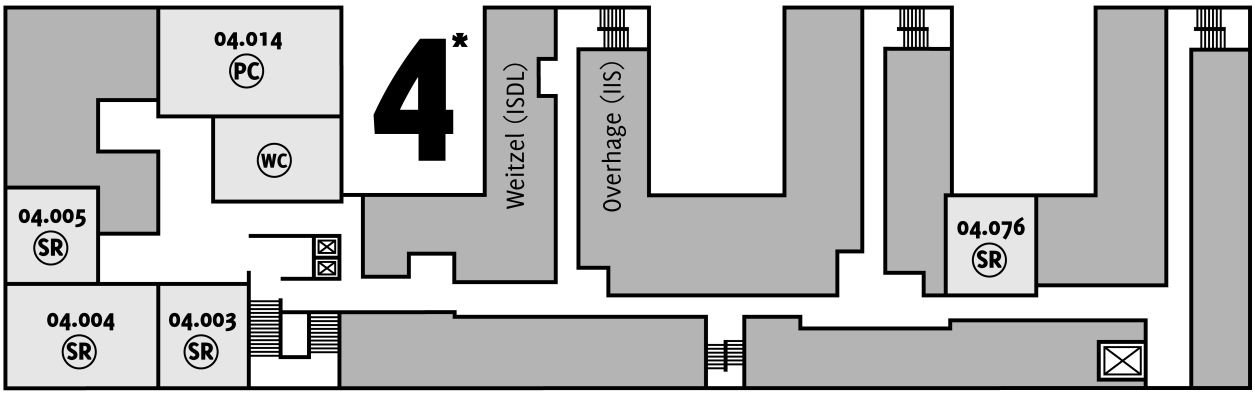
Fachschaftsvertretung WIAI whishes you
success with your studies and a great time at our university!

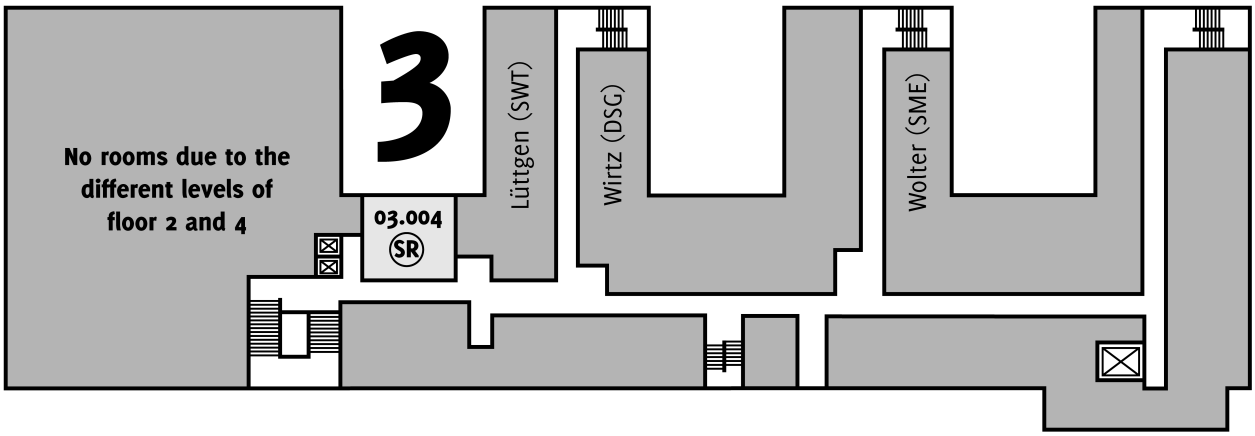
http://www.uni-bamberg.de/wiai/fs/
https://vc.uni-bamberg.de/moodle/course/view.php?id=284
Room: WE5/02.104

12 Map of the Erba Campus









Key:

- SR — Seminar rooms
- WC — Public restrooms
- TB 6 — ERBA library
- FS — Student association, room 02.104
- HV — Property management, room 05.079
- ⊠ — Elevators
- PC — CIP pools

*** Different levels, therefore there are 2 elevator stops for passenger elevator**

This scheme was created and provided by

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Your way through your studies!

www.feki.de

13 Bus Timetables

The following tables show the most important bus timetables for students of the WIAI faculty. Further information can be found in the offical timetables located at the bus stops or online: https://www.vgn.de/en/. Alternatively, you can use the official VGN app available for Android and IOS (https://vgn.de/en/service/app/).

Line 906 ZOB → ERBA Mon. – Fri.

Departure *ZOB*	Arrival *Gaustadt Spinnerei*
stündlich 6-18 Uhr	
00	09
15	24
30	39
45	54

Line 906 ERBA → ZOB Mon. – Fri.

Departure *Gaustadt Spinnerei*	Arrival *ZOB*
06:23	06:36
06:38	06:51
06:53	07:06
stündlich 7-18 Uhr	
08	21
23	36
38	51
53	06

Line 925 ERBA ↔ FEKI Mon. – Fri.[6]

Departure *ERBA*	Arrival *FEKI*	Departure *FEKI*	Arrival *ERBA*
07:59	08:06	07:51	07:57
09:59	10:06	09:51	09:57
11:59	12:06	11:51	11:57
13:59	14:06	13:51	13:57
15:59	16:06	15:51	15:57
17:59	18:06	17:51	17:57

[6] Line 925 is only available during the lecutre period of the University of Bamberg (09.04 - 14.07)

14 Publishing Information

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Furthermore the respective chapters are in the responsibility of the following authors:

Chapter 0	Introduction	Dean Faculty WIAI
Chapter 1	Otto-Friedrich-University Bamberg	Department Z/KOM - Communication & Alumni
Chapter 2	Faculty WIAI	Dean
Chapter 3	Introduction International Software Systems Science	Programme Advisory Service
Chapter 4 (to 4.8)	Studies and Exam System - General Part	Dean of Studies
Chapter 4 (from 4.9)	Studies and Exam System	Degree Programme Representative
Chapter 5	Creating a Timetable	Degree Programme Advisor
Chapter 6	eLearning	Dean of Studies & VHB Representative
Chapter 7	Languages	International Affairs Representative
Chapter 8	Internship / Graduate Study Abroad	International Affairs Representative
Chapter 9	PC-Pools & icprint	CIP Representative
Chapter 10	Internet access for students	Counsellor RZ
Chapter 11	Fachschaftsvertretung WIAI	Fachschaft WIAI
Chapter 12	Map of the Erba Campus	Fachschaft WIAI
Chapter 13	Bus Timetables	Fachschaft WIAI

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