## MODULE GUIDE

## Fundamentals of Computer Science 1

| Module code | 1.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M1.1 Fundamentals of Computer Science 1 |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | Prof. Dr. Axel Viereck<br>axel.viereck@hs-bremen.de<br>0421 5905 5102 |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | An introduction to the basic concepts and terms in the study of computer science, especially algorithms. Study and discussion of Von Neumann's architecture model, data-coding and Boolean algebra, and algorithms in basic and high-level programming language. Specific topics are formal languages, grammars and their practical applications and basic automata theory. |
| Aims of the module | To provide students with a comprehensive introduction to the basic terms and concepts in the field of computer science so that students will be equipped to take a problem-solving approach in their study of computer science. In addition to factual knowledge, an emphasis will also be placed on the knowledge and practice of working methods. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment<br>(Requirements for the awarding of credit points – grading scale) | written examination<br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |

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| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 3 seminar, 1 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 1st semester |
| Remarks | |

## Structured Programming

| Module code | 1.2 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M1.2 Structured Programming |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | An introduction to structured programming. The module covers the techniques of using the basic tools to develop and test software. On the basis of the logical programming paradigms of constants and variables, control structures and block concepts, the design and analysis of algorithms for solving important problems that often arise in applications will be taught and practiced using standard APIs. |
| Aims of the module | To train students to acquire the basic theoretical and practical competence to develop software using high-level programming languages. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Academic paper to be submitted at the end of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | none |

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| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 1st semester |
| Remarks | |

## Operating Systems Practicum

| Module code | 1.3 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M1.3 Operating Systems Practicum |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Topics include:<br>- The study of fundamental principles underlying computer operating systems.<br>- Database systems hierarchy<br>- The UNIX operating system<br>- UNIX user administration and security concepts<br>- UNIX systems calls<br>- UNIX editing<br>- Shell scripts in UNIX<br>- The DOS operating system<br>- Computer graphics operating systems |
| Aims of the module | To provide students with the practical training and the proper skills to gain the competence to operate and manage a computer on the basis of a given operating system. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Written examination at the end of the semester |

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| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 1st semester |
| Remarks | |

## Computer Architecture and Configuration

| Module code | 1.4 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M1.4 Computer Architecture and Configuration |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Topics include:<br>• The main circuit board (motherboard) of a computer<br>• The processor, the arithmetic and logic unit, the control unit (CPU)<br>• I/O control<br>• Peripheral storage<br>• Input units<br>• Output units<br>• Disassembly and installation of components such as the processor, the CPU, working storage, peripheral storage and other components<br>• Installation of systems software and application software<br>• Motherboard partitioning and formatting<br>• Installation of peripheral units and devices<br>• Troubleshooting, debugging |
| Aims of the module | To provide students with a comprehensive understanding of the architecture of a computer and the peripheral units and devices, i.e. the set-up of the individual components, their functions and their inter-connection in the processing of specific programs. To train students to be able to set-up computer systems, to add units, to install application software and to function as trouble-shooters when problems with the hardware or the software may arise. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | laboratory, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |

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| Methods of assessment<br><br>In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | Written examination at the end of the semester<br><br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 laboratory, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 1st semester |
| Remarks | |

## Mathematical Foundations of Computer Science

| Module code | 1.5 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M1.5 Mathematical Foundation of Computer Science |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Basic elements of mathematics in theory and practical exercises as required for the application of mathematical logic in computer science. Specifically, competences and skills will be developed in the areas of mathematical logic, sets, relations, mapping and number systems. |
| Aims of the module | The module aims to teach students that mathematics does not simply consist of putting numbers into equations, but rather involves the application of structured logical thinking. Students should know the above stated mathematical terms and concepts, and be able to recognize and apply them in new situations outside the sphere of the academic field of mathematics. Students should be able to comprehend and reproduce on their own, logical conclusions and analyze them in a discussion situation using the techniques of mathematical logic. Students should also be able to transform colloquial language into abstract logical language and apply the techniques of logical thinking in reformulating a given problem. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Written examination at the end of the semester |

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| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 1st semester |
| Remarks | |

## Fundamentals of Computer Science 2

| Module code | 2.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M2.1 Fundamentals of Computer Science 2 |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | Prof. Dr. Axel Viereck<br>axel.viereck@hs-bremen.de<br>0421 5905 5102 |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | data structures<br>- basic<br>- linear (lists, stacks, queues)<br>- trees<br>- sets<br>- graphs<br>using data structures for algorithms<br>- algorithmic procedures (iteration, recursion, greedy, …)<br>- algorithms on graphs<br>- consider complexity<br>algorithms for fundamental problems of computer science<br>- sort<br>- hash<br>- search |
| Aims of the module | The students will be able to apply terms and concepts of algorithms and data structures to basic and medium difficult problems. So that they are able to<br>- use appropriate standard data structures or come up with new data structures<br>- develop algorithms<br>- evaluate solutions referring to correctness, complexity and elegance<br>Furthermore, the students will develop competence for using and adapting methods by solving new problems. By working in groups |

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| | and reflecting on their work, their social competence will be increased.<br>The students will discover their own skills and strengths and learn to act appropriate. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br><br>In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | written examination<br><br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | passed examination of module 1.1 “fundamentals of computer science 1” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 3 seminar, 1 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 2$^{st}$ semester |
| Remarks | |

## Object-oriented Programming

| Module code | 2.2 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M2.2 Object-oriented Programming |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Introduction to object-oriented programming. On the basis of basic concepts in object-oriented programming such as objects, classes and inheritance, the object-oriented design, construction and testing of software applications will be explored and practiced in applied situations. Theoretical concepts will be studied using formal description languages such as UML and the available development tools. The focus in the practical work will be on the design and the creation of an interactive graphical user interface using standard APIs |
| Aims of the module | Students should acquire the basic theoretical competence and the practical skills to develop software using object-oriented programming languages |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | A practical development project and written report, due at the end of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |

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| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 2st semester |
| Remarks | |

**The Internet and Media Systems**

| Module code | 2.3 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M2.3 The Internet and Media Systems |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Topics include:<br>- Functions and structure of the internet<br>- The implementation of internet applications<br>- HTML and JavaScript<br>- The use of developer tools to design and implement media applications |
| Aims of the module | The students will acquire the technical, practical and application-relevant skills and knowledge to work with the internet. Key competences in this context are the ability to develop internet applications based on the web page design language HTML using the developer tools required for media applications. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Either an academic paper or a presentation and written paper to be submitted in the course of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter in the |

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| | module core areas “Foundations of Computer Science” and “Hardware and Software Administration” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 2st semester |
| Remarks | |

**Distributed Network Systems**

| Module code | 2.4 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M2.4 Distributed Network Systems |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Topics include:<br>- Fundamental concepts and principles in data communication and computer networks, reference models for the set-up and functions of computer networks<br>- Application techniques and protocols in data transmission in local-area networks<br>- Network techniques and protocols in data transmission between a transmitter and a receiver within a computer network via a buffer, the client-server model<br>- Network techniques and protocols in data communication of application systems within distributed systems<br>- Network techniques, applications and characteristics of wide-area networks<br>- The planning and operation of computer networks |
| Aims of the module | To teach students the fundamental theoretical concepts and application techniques involved in data communication and computer networks and to introduce them to network performance analysis. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, laboratory, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment | Written examination at the end of the semester |

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| In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter of the module core areas “Foundations of Computer Science” and “Hardware and Software Administration” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 laboratory, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 2$^{st}$ semester |
| Remarks | |

## Advanced Mathematics for Computer Science

| Module code | 2.5 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M2.5 Advanced Mathematics for Computer Science |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | This course focuses on specific advanced mathematical concepts that are of relevance in computer science. The key topics include:<br>- Graph theory<br>- Applied analysis<br>- Number theory<br>Graph theory serves to describe many structures in computer science. Applied analysis is used in computer graphics, and number theory is the basis for every form of coding. |
| Aims of the module | Focusing on three key areas of computer science as examples (data structures, graphics programming, and coding), students should learn how mathematics can be used to solve basic problems in computer science. A special emphasis will be placed on the students' ability to translate quite specific practical problems into the abstract language of mathematics, and then to use the methods of applied mathematics to solve the given problem. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Written examination at the end of the semester |

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| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter in the modules “Mathematical Foundations of Computer Science” and “Mathematics for Computer Science” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 2$^{st}$ semester |
| Remarks | |

**Software Engineering**

| Module code | 3.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M3.1 Software Engineering |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Topics include:<br>- Software quality assurance and quality assurance aspects in software development<br>- The life-cycle model of software development phases<br>- Methods of software requirements specification and their application in the life-cycle phases of software development<br>- Object-oriented analysis and design<br>- Data and functions models<br>- Use of automated tools in the modeling process<br>- Prototyping in software development |
| Aims of the module | The module should provide students with the foundations of the software development process as an engineering discipline. The focus will be on teaching students to see and understand the software development process as work in project organization, involving a number of different developmental phases. Students will also acquire the knowledge and the skills to use the available methods and tools that are involved in software development. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment | Written examination at the end of the semester |

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| In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of these modules: “Foundations of Computer Science”, “Hardware and Software Administration”, Information Systems”, Distributed Systems” and “Object-Oriented Programming” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 seminar, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 3st semester |
| Remarks | |

**Database Systems Practicum**

| Module code | 3.2 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M3.2 Database Systems Practicum |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course aims to teach the fundamental concepts in database design, security and integrity policy, and recovery measures. A focus will be placed on relational databases. Topics include:<br>- The relational model<br>- Fundamental principles of database design<br>- SQL as a database access and database description language |
| Aims of the module | To teach students the fundamental concepts in information systems and relational database design. This ranges from modeling to the specific implementation involving database management, query processing and the consideration of security aspects and the optimization of the storage structure. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment<br>(Requirements for the awarding of credit points – grading scale) | Practical project and academic paper due and a written examination at the end of the semester.<br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter in the |

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| | module core area “Foundations of Computer Science” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 2$^{st}$ semester |
| Remarks | |

**Hardware Foundations**

| Module code | 3.3 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M3.3 Hardware Foundation |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course aims to provide students with a broad overview of the theoretical and practical foundations of hardware and machine-related programming. Areas of emphasis will be:<br>- Introduction to electrical engineering<br>- Design of digital circuits and computer memory organization<br>- Data transfers between the CPU and peripheral devices<br>- The hardware description language VHDL |
| Aims of the module | Students should gain an understanding of the theoretical and practical foundations of hardware technology. In addition, they will acquire knowledge in the area of hardware and machine-related software development. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, laboratory, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment<br>(Requirements for the awarding of credit points – grading scale) | Written examination at the end of the semester<br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies |

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| | program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science.<br>Prior completion and knowledge of the subject matter in the module core areas "Foundations of Computer Science" and "Hardware and Software Administration" |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 laboratory, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 3st semester |
| Remarks | |

**Foreign Language Skills: English 1**

| Module code | 3.4 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M3.4 Foreign Language Skills: English 1 |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | This course has been designed as a "refresher course", bringing students up to the level of being able to use English in conversational situations as well as for academic purposes. The emphasis will be on:<br>- Speaking skills, everyday conversational situations, greetings and introductions, discussion skills and short presentations on academic subjects<br>- Work on grammatical structures and vocabulary building<br>- Listening skills, especially in academic discussion and lecture situations<br>- Job-related language skills: negotiations, business communications, setting up applications and CVs, and practicing job interview situations |
| Aims of the module | The course aims to provide students with a good command of the English language so that they can function effectively in everyday conversational situations as well as in academic settings in an English-speaking environment. The course serves primarily the purpose of preparing students for their semester abroad in an English-speaking environment and to train students so that they can follow lectures in their academic field in English. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment | Oral examination at the end of the semester. |

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| In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 seminar, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | English |
| Level | 3st semester |
| Remarks | |

**Project Management**

| Module code | 4.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M4.1 Project Management |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | An introduction to the practical aspects of project management. Topics include:<br>- Principles of project work<br>- Project aims and objectives, project planning, project scheduling, project control and management<br>- Network models and techniques<br>- The role and function of the project leader<br>- Quality control in projects<br>- Information and reporting systems<br>- Risk analysis and crisis management |
| Aims of the module | The students will be introduced to the theoretical and practical principles of project work and project management. They will study the basic concepts, methods and tools involved in the planning and the successful management of projects. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Practical project and report due at the end of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |

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| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter in the modules: “Foundations of Computer Science”, “Hardware and Software Administration”, “Information Systems”, “Distributed Systems” and “Object-oriented Programming”. |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 4st semester |
| Remarks | |

**Programming Practicum**

| Module code | 4.2 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M4.2 Programming Practicum |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The module involves the development of an interactive system in accordance with a given project task and assignment using an object-oriented programming language |
| Aims of the module | This module provides students with the opportunity to gain first-hand practical experience in professional software development in a team. Students will work through the software development phases of object-oriented modeling, programming, testing, verification and documentation in realistic team projects and apply and deepen their programming skills and knowledge. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | exercises, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Practical project and report to be completed in the course of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter of the modules: "Foundations of Computer Science", "Hardware and Software Administration", "Information Systems", "Distributed |

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| | Systems” and “Object-oriented Programming” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 4st semester |
| Remarks | |

**Systems-linked Software**

| Module code | 4.3 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M4.3 Systems-linked Software |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course deals with the foundations of operating systems and the main features provided by operating systems, including different types of operating systems, process communication and management, scheduling, deadlocks, storage management, data systems, input/output, and distributed systems. Students will also be introduced to assembler language programming. |
| Aims of the module | Students will study the foundations, features and functions of operating systems. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, laboratory, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Either written examination or academic paper due at the end of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science.<br>Prior completion and knowledge of the subject matter in the |

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| | module core areas “Foundations of Computer Science” and “Hardware and Software Administration” |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 2 laboratory, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 4st semester |
| Remarks | |

**Software Ergonomics**

| Module code | 4.4 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M4.4 Software Ergonomics |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course introduces students to the history and development of user-friendly design in interactive systems and human-computer interfaces. Topics include:<br>- Hardware ergonomics, design of machines and computer work stations<br>- Software ergonomics, user perception, information processing, norms and processes in software development, design of user interfaces<br>- Orgware ergonomics |
| Aims of the module | Students should be introduced to the notion of ergonomics within the context of the software development process as an engineering discipline. Students should become sensitive to the psychological and the scientific work- process needs and demands in the design of user-friendly and physically suitable computer systems. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Written examination at the end of the semester |

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| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Prior completion and knowledge of the subject matter in the modules: Foundations of Computer Science", Hardware and Software Administration", Information Systems", "Distributed Systems" and "Object-oriented Programming. |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 seminar, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 4st semester |
| Remarks | |

**Foreign Language Skills: English 2**

| Module code | 5.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M5.1 Foreign Language Skills: English 2 |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | Emphasis on deepening specialist vocabulary and grammatical patterns, and advanced level practice of the language. A special focus will be placed on achieving an active command of English for students of computer science. In cooperation with the instructors of the various modules in the field of computer science, specific topics in computer science will be defined as areas that students will be exposed to using English as the language of instruction and class discussion. Key skill areas are:<br>- Spoken English: preparation and active practice of short presentations dealing with specific topics in computer science<br>- Reading and writing skills: developing intensive reading skills using articles from academic and scientific journals in computer science, developing writing skills by practicing note-taking, outlining skills and summary and analysis writing in preparation of presentations in the field of computer science. |
| Aims of the module | Students should receive intensive training in English language usage for computer science purposes so that they will be equipped to follow lectures and to take classes in English in the field of computer science, both at the Hochschule Bremen and during their studies abroad. Should certain modules in computer science be offered in English, the English language module will serve as a support and practice module focusing on the language comprehension aspect? |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar |

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| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br><br>In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | Academic paper to be completed during the semester.<br><br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science.<br>Prior participation in the module "Foreign Language Skills: English I" that is part of the module core area "Communication Skills" |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 seminar |
| Assumed hours of self-study | 8 |
| Credit Points | 6 |
| Language of Instruction | English |
| Level | 5st semester |
| Remarks | |

**Semester Abroad**

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| Module code | 5.2<br>5.3<br>5.4 |

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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M5.2 Elective Subject from the range of modules from the host university<br>M5.3 Elective Subject from the range of modules from the host university<br>M5.4 Elective Subject from the range of modules from the host university |
| Semester | winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises |
| Assumed hours of self-study | 8 |
| Credit Points | 6 |
| Language of Instruction | |
| Level | 5st semester |
| Remarks | |

## Communication Training

| Module code | 5.5 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M5.5 Communication Training |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course aims to provide an introduction to some of the basic rules and methods that designate effective communication, both in public situations as well as in the working world. Topics include:<br>- Preparation and presentation of speeches<br>- Leading and moderating discussions<br>- Structure and design of effective presentations<br>- Teamwork and presentations within groups<br>- Communication skills and effective team work |
| Aims of the module | Students will study and practice effective presentation and visualization techniques for academic and professional purposes. Students will learn to prepare and to deliver speeches and presentations in small-group settings, gaining practical experience and self-confidence in applying their communication skills within a teamwork environment. Emphasis will be placed on evaluation and self-reflection of the communication process, and students will be introduced to the feedback method. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Presentation and written paper to be completed in the course of the semester. |

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| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | none |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 exercises |
| Assumed hours of self-study | 8 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 5st semester |
| Remarks | |

**Project 1**

| Module code | 6.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M6.1 Project 1 |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course involves the development of an interactive software system on the basis of a given problem-solving project task and assignment using an object-related programming language |
| Aims of the module | This module provides students with the opportunity to gain advanced-level practical experience in professional software development as members of a project team. Students will work through and use the software development phases of object-related modeling, programming, testing, verification and documentation in solving a complex given task and assignment and in the process they will deepen their programming skills and develop their ability to work in a team. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | project, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Practical project and report to be completed in the course of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies |

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| | program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science.<br>Prior completion and knowledge of the subject matter in the module core areas "Foundations of Computer Science", "Hardware and Software Administration", "Information Systems", "Distributed Systems", "Software Engineering", and "Object-oriented Programming" |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 project, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 6st semester |
| Remarks | The given project problem-solving task and assignment will vary from year to year. Depending on the availability of resources and instructors within the department, it may also be possible that students may decide on one given project assignment, choosing from a number of different possible project assignments being offered. |

**Project 2**

| Module code | 6.2 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M6.2 Project 2 |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course involves the development of an interactive software system on the basis of a given problem-solving project task and assignment using an object-related programming language |
| Aims of the module | This module provides students with the opportunity to gain advanced-level practical experience in professional software development as members of a project team. Students will work through and use the software development phases of object-related modeling, programming, testing, verification and documentation in solving a complex given task and assignment and in the process they will deepen their programming skills and develop their ability to work in a team. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | project, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment | Practical project and report to be completed in the course of the semester. |
| (Requirements for the awarding of credit points – grading scale) | ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies |

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| | program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science.<br>Prior completion and knowledge of the subject matter in the module core areas "Foundations of Computer Science", "Hardware and Software Administration", "Information Systems", "Distributed Systems", "Software Engineering", and "Object-oriented Programming" |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 4 project, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 6st semester |
| Remarks | The given project problem-solving task and assignment will vary from year to year. Depending on the availability of resources and instructors within the department, it may also be possible that students may decide on one given project assignment, choosing from a number of different possible project assignments being offered. |

**Computer Science and Society**

| Module code | 6.5 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M6.5 Computer Science and Society |
| Semester | summer semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course provides an overview of the social history of information technology and communication techniques, and examines some selected areas within the field of the societal dimensions of information technology and communication means. Topics include:<br>• Information society: interrelationship with politics, democracy, participation, regulations and access<br>• Computer science and the working world: rationalization, automation, control, impact of information technology<br>• Data protection and domestic security: the legal framework and issues, data screening devices, video control systems, data protection and individual rights<br>• Social science research perspective on the impact of computer science and information technology and their long-term effects<br>• Examination of the application and impact within working, public, leisure and private life |
| Aims of the module | Students should gain a broad understanding of how computer science has become embedded in society, its impact, the historical context of its development, and the options and opportunities in shaping, designing and influencing the future development of information technology. Students should learn to be able to reflect upon the design and the application of information technology and means of communication from a number of different perspectives. This should allow students to be able to assess the impact of computer science within the context of their own work and to consider the benefits, the opportunities, the risks and the social responsibility involved in the future direction of the developments in computer science. |

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| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br><br>In-course assessment<br><br>(Requirements for the awarding of credit points – grading scale) | Presentation and written paper to be submitted in the course of the semester.<br><br>ii accordance with the Bachelor rules and regulations |
| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science. |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each summer semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 6st semester |
| Remarks | |

**Computer Science and Business Administration**

| Module code | 7.1 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M7.1 Computer Science and Business Administration |
| Semester | winter semester |
| Lecturer responsible for the module<br>E-mail address<br>Telephone number<br>Contact times<br>Other contact person | |
| Venue | ZIMT – Centre for Computer Science and Media Technology |
| **Subject matter and educational aims** | |
| Syllabus content | The course will centre on the development of a business concept and a business plan within the context of a start-up idea. The focus will be on the consideration of the basic concepts and elements of business administration, the development of a start-up idea and the set up of a business plan, defining company goals, objectives and strategies, decisions on the legal form of organization, marketing and strategic marketing analysis, selection of the potential target market, marketing mix decisions on the product/service provided, distribution and logistics decisions, price policy and choice of media advertising. |
| Aims of the module | Through this business simulation game, students should acquire a basic understanding of the principles of business administration and the key factors involved in setting up a business and developing a business plan. |
| **Methods of teaching, learning and assessment** | |
| Methods of Teaching | seminar, module corresponding exercises |
| Methods of Learning | single work, teamwork, guided self-study |
| Methods of assessment<br>In-course assessment<br>(Requirements for the awarding of credit points – grading scale) | Either a written examination at the end of the semester or a presentation and written paper or an academic paper to be submitted at the end of the semester.<br>ii accordance with the Bachelor rules and regulations |

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| **Requirements for attendance** | |
| Qualifications | Completion of the pre-diploma. Admittance into the main studies program (Semesters 4 through 8) of the Women's International Degree Course in Computer Science |
| **Usability of the module** | |
| Application within the Hochschule Bremen, University of Applied Sciences | compare module register |
| **Duration and frequency of the module** | |
| Cycle of the module | each winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | 2 seminar, 1 guided self-study |
| Assumed hours of self-study | 7 |
| Credit Points | 6 |
| Language of Instruction | German |
| Level | 7st semester |
| Remarks | |

**Internship**

| Module code | 7.2<br>7.3 |
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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M7.2, 7.3 Internship during a time of 9 weeks |
| Semester | winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | Each one4 exercises |
| Assumed hours of self-study | each one 8 |
| Credit Points | each one 6 |
| Language of Instruction | |
| Level | 7st semester |
| Remarks | |

**Bachelor Thesis**

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| Module code | 7.4<br>7.5 |

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| **General conditions** | |
| Institution | Department of Electrical Engineering and Computer Science |
| Course of study | Women's International Degree Course in Computer Science B.Sc. |
| Subject area | M7.4, 7.5 Solving of a given problem by using scientific methods during a time of 9 weeks |
| Semester | winter semester |
| **Outline of the module and work load** | |
| Type of module | requirement |
| Contact hours in semester periods per week | Each one4 exercises |
| Assumed hours of self-study | each one 8 |
| Credit Points | each one 6 |
| Language of Instruction | |
| Level | 7st semester |
| Remarks | |