Computer Science Engineering BSc
Study Abroad Course List

Tuition-fee/credit: 120 USD

For course syllabi, please contact the Study Abroad Office!

Course title	Semester	Credits (ECTS)
Operating Systems	Spring	6
System Theory	Fall	6
Measurement and Data Acquisition	Spring	6
Programming 4.	Spring	6
Programming 1.	Fall	5
Databases 1.	Fall	5
Programming 2.	Fall	5
IP Based Systems 1.	Fall	5
Electronics 1.	Spring	5
Databases 2.	Fall	5
Programming 5.	Fall	5

Detailed information about the courses:

Operating Systems

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2+2
Credits (ECTS):	6
Course description:	The aim of this course is to teach students the basics and design of operating systems. The course will cover several concepts of operating systems. Operating systems concepts. System calls. Processes and threads. Interprocess communication, race conditions, busy waiting, mutual exclusion, sleep and wakeup, semaphores, mutexes. Message passing. Scheduling. Batch systems. Interactive systems. Real-time systems. Input/output, device controllers, DMA, Deadlock, detection and recovery, prevention, avoidance. Disks. Memory management. Allocation strategies. Virtual memory. Paging and segmentation. File systems.
Assessment methods:	exam
Teaching period:	Spring

System Theory

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	2+2
Credits (ECTS):	6
Course description:	The course provides the students with the fundamental concepts of control engineering including the operating principles of control systems, their analysis and synthesis. The student successfully completing the course will be able to analyze continuous and discrete control systems in various engineering applications, to understand and solve the most common control problems in real-time embedded environment. The course provides sufficient background for later specialized studies.
Assessment methods:	exam
Teaching period:	Spring

Measurement and Data Acquisition

Language of instruction:	English
Form of teaching:	lecture, laboratory

Class hours/week:	2+3
Credits (ECTS):	6
Course description:	The students learn the basic concepts of the measurement theory, structure and practice of the programmable data acquisition systems and virtual instrumentation. The basic concepts of measurement. The relationship between the measurement and modeling. Characteristics of measurement procedures, the basic structure types. Basic methods for processing measurement data. Measuring instrument design. Smart sensors and actuators. Development of data acquisition system with programmed measurement units. Virtual instrumentation. Applying graphical programming language in the instrumentation.
Assessment methods:	exam
Teaching period:	Spring

Programming 4.

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	2+3
Credits (ECTS):	6
Course description:	
Assessment methods:	exam
Teaching period:	Spring

Programming 1.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	1+2
Credits (ECTS):	5
Course description:	This course provides an introduction to all of the fundamental aspects of the C programming language, including elementary data types; arithmetic, logical and bitwise operators; control-flow statements; functions; structures; pointers; program scope rules; good program design practices; and C debugging techniques. Emphasis is on the ANSI-standard C.
Assessment methods:	semester mark
Teaching period:	Fall

Databases 1

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	2+2
Credits (ECTS):	5

Course description:	This course provides the students with an introduction to the core concepts in databases. It is centered around the core skills of identifying organizational information requirements, modeling them using conceptual data modeling techniques, converting the conceptual data models into relational data models and verifying its structural characteristics with normalization techniques, and implementing and utilizing a relational database using an industrial-strength database management system.
Assessment methods:	exam
Teaching period:	Spring

Programming 2.

Language of instruction:	English
Form of teaching:	lecture, practice
Class hours/week:	2+3
Credits (ECTS):	5
Course description:	The purpose of this course is to introduce the students to the fundamental concepts of object-oriented programming and appreciate the complexity of application development. Students will learn the basic concepts of program design, problem solving, and fundamental design techniques for object-oriented and event-driven programs. Program development will incorporate the implementing a solution in a programming language C# .NET, and testing the completed application.
Assessment methods:	semester mark
Teaching period:	Spring

IP Based Systems 1.

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	2+3
Credits (ECTS):	5
Course description:	This course is intended to help students understand the mechanisms of upper OSI layers. We will focus on an overview of network, transport and application layers. Students who successfully complete this course will have a concept and knowledge building, operating and managing computer networks. Students will also have hands-on experience in building computer networks, configuring active network devices, switches, routers through lab sessions.
Assessment methods:	exam
Teaching period:	Spring

Electronics 1

Language of instruction:	English
Form of teaching:	lecture
Class hours/week:	2
Credits (ECTS):	5
Course description:	Making the students acquainted with the basic electronic parts, analog and digital circuits, and the basics of wired and optical signal transmission. Passive and active electric parts.Physical fundamentals of semiconductors, the operation of p-n junction.Diode, bipolar transistor.Operation, characteristics, working modes, models of JFET and MOSFET. Active parts of optical signal transmission. Low-signal amplifier base circuits.Setting of the operating point, characteristics of amplifying.Concept of signal and power adaptation.Principles of feedback.The architecture and typical use of operational amplifiers.Types of signal sources and drains, their circuit models, rules of connecting them together. Disturbance signals.
Assessment methods:	exam
Teaching period:	Spring

Databases 2.

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	2+2
Credits (ECTS):	5
Course description:	
Assessment methods:	exam
Teaching period:	Spring

Programming 5.

Language of instruction:	English
Form of teaching:	lecture, laboratory
Class hours/week:	1+2
Credits (ECTS):	5
Course description:	
Assessment methods:	exam
Teaching period:	Spring