INTEGRATED SYSTEMS AND CIRCUITS DESIGN

MASTER | FULL-TIME, WORK-FRIENDLY SCHEDULE

LANGUAGE OF INSTRUCTION: English

DURATION: 4 semester

SCHEDULE: Monday-Friday after 4 p.m., occasional Saturdays

STUDY PLACES PER YEAR: 20

PROGRAM START: October

ACADEMIC DEGREE:
Master of Science in Engineering (MSc)

ECTS POINTS: 120

TUITION FEE: € 363.36 per semester

STUDENT UNION FEE: € 19.20 per semester

Integrated circuits have seen an unprecedented development over the last six decades. Fabrication technologies with structure sizes down to 14nm allow always more complex, more reliable and more cost efficient solutions, reaching new application areas. Due to new requirements and especially due to the enormous complexity, new challenges in the design of integrated systems and circuits have to be faced. The master degree program ISCD - Integrated Systems and Circuits Design provides the necessary knowledge to master these challenges.

COURSE INFORMATION

The curriculum offers 2 semesters of mandatory courses and allows specialization in the more analog or digitally dominated domain through elective courses in semester 3 and a thesis work which is accompanied by seminars with presentations and technical discussions in semester 4.
The practical aspect of this master degree programm is emphasized by a project module, spanning semester 1 to 3. With first preparations during semster 1, students design an integrated circuit in small teams and implement a testchip during semester 2. After fabrication of the testchip, samples will be available in semester 3 for evaluation in the lab using state of the art test equipment.

JOBS & CAREER

The typical graduate will be working for integrated circuit manufacturers, fabless foundries, design houses or suppliers of system solutions using VLSI components. Target employers will be Austrian and international companies.

Research and development in the field of microelectronics is done in close cooperation with Austria and international partners. It offers students the possibility to participate in the form of master thesis or internships. For more information on current and completed projects in the area of microelectronics:
www.fh-kaernten.at/iscd

CURRICULUM

1st SEMESTER

Design of Digital Integrated Circuits, ECTS: 6
Integrated Circuit Technology, ECTS: 3
Introduction to Computer Aided Design, ECTS: 6
Design of Analog Integrated Circuits, ECTS: 7,5
Introduction to Project, ECTS: 3
Basics in Systems and Circuits Theory, ECTS: 2,5
Foreign Language (1), ECTS: 2

2nd SEMESTER

Advanced Topics in Analog Integrated Circuits, ECTS: 7,5
Computer Aided Design, ECTS: 3
System Modeling and Verification - Digital, ECTS: 4,5
Digital Design with HDL, ECTS: 7,5
IC Design and Implementation, ECTS: 5,5
Foreign Language (2), ECTS: 2

3rd SEMESTER

Testing of Integrated Circuits, ECTS: 4,5
System Modeling and Verification - Analog, ECTS: 3
IC Evaluation, ECTS: 2,5
Elective: **Analog & Mixed-Signal ICs for Comm Systems**, ECTS: 5
Elective: **Integrated Data Converters**, ECTS: 5
Elective: **System-on-Chip Architectures**, ECTS: 5
Elective: **Special Topics in VLSI/SoC/SiP Design - 1**, ECTS: 5
Elective: **Advanced Topics in Digital Integrated Cicuits**, ECTS: 5
Elective: **Integrated Sensors for Automotive Applications**, ECTS: 5
Elective: **Arithmetic Modules for VLSI/SoC Design**, ECTS: 5
Elective: **Special Topics in VLSI/SoC/SiP Design - 2**, ECTS: 5

4th SEMESTER

Master Thesis, ECTS: 24
Master Thesis Seminar, ECTS: 6

ECTS is a learner-centred system for credit accumulation and transfer, based on the principle of transparency of the learning, teaching and assessment processes. ECTS credits express the volume of learning based on the defined learning outcomes and their associated workload. 60 ECTS credits are allocated to the learning outcomes and associated workload of a full-time academic year. Workload is an estimation of the time the individual typically needs to complete all learning activities such as lectures, seminars, projects, practical work, work placements and individual study required to achieve the defined learning outcomes in formal learning environments.

Minor changes to the curriculum are possible in order to adapt to current developments in academia as well as practice.

What I appreciated most were the modern labs, the software and the state-of-the-art equipment. The lectures were taught in English and the students came from different nations. Studying ISCD offered me the possibilty to take part in research projects as well.

GRACIELE BATISTELL, MSc
ISCD graduate

ADMISSION REQUIREMENTS: Bachelor in Systems Engineering, Mechanical Engineering, Electronics or comparable IT program

APPLICATION DEADLINE: 15 July 2017 (EU citizens), 15 April 2017 (Non-EU citizens)

ADMISSION PROCEDURE: Interview; Appointments can be arranged individually

STUDY-INFO-LOUNGE: Every second Tuesday of the month from 2 to 6 p.m. Campus Villach

FH DAY: Open Day on 24 March 2017
www.fh-kaernten.at/fhday

STUDY LOCATION: Campus Villach
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