




INTEGRATED SYSTEMS AND CIRCUITS DESIGN


MASTER | WORK-FRIENDLY




 **Location:** Campus Villach
Europastraße 4, 9524 Villach


 **Duration:** 4 semesters

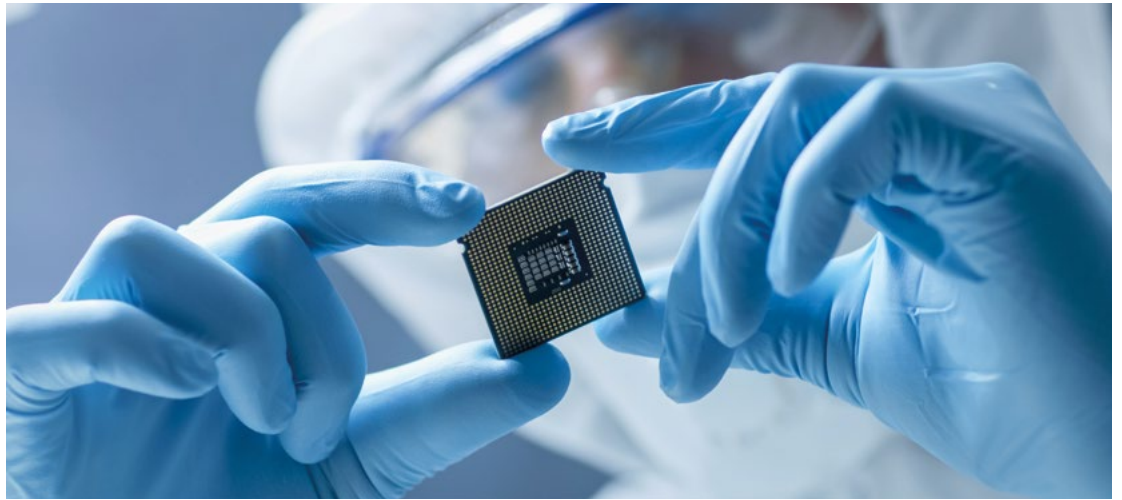
 **Schedule:**
Mon.-Fri. starting at 4:00 pm,
Sat. occasional, work-friendly-schedule

 **Academic Degree:**
Master of Science in Engineering (MSc)

 **ECTS Credits:** 120

 **Language:** English

 **Study places per year:** 20



Integrated circuits have seen an unprecedented development over the last six decades. Fabrication technologies with structure sizes down to 14 nm 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 programme ISCD – Integrated Systems and Circuits Design provides the necessary knowledge to face these challenges.

COURSE INFORMATION

The first 2 semesters consist of basic courses. The specialization in either analogue or digital Integrated Circuits takes place in the 3rd semester. In the last semester students write their thesis, which is accompanied by seminars, presentations and technical discussions.

The practical aspect is emphasized by a project module spanning from 1st to 3rd semester - starting with designing an integrated circuit in a small team and later implementing a testchip. After the fabrication of the testchip, samples will be evaluated by the students with state of the art test equipment.

JOBS AND CAREER

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

Research and development in the field of microelectronics is done in close cooperation with Austrian and international partners. So, students have the opportunity to write their master thesis with a company or apply for an internship. For more information on current and completed projects in the area of microelectronics: www.fh-kaernten.at/iscd

CURRICULUM

| 1 st Semester | ECTS |
|---------------------------------------|-----------|
| Design of Digital Integrated Circuits | 6 |
| Integrated Circuits Technology | 3 |
| Introduction to Computer Aided Design | 6 |
| Design of Analog Integrated Circuits | 7,5 |
| Introduction to Project | 3 |
| Basics in Systems and Circuits Theory | 2,5 |
| Foreign Language (1) | 2 |
| Total | 30 |

| 2 nd Semester | ECTS |
|---|-----------|
| Advanced Topics in Analog Integrated Circuits | 7,5 |
| Computer Aided Design | 3 |
| System Modeling and Verification – Digital | 4,5 |
| Digital Design with HDL | 7,5 |
| IC Design and Implementation | 5,5 |
| Foreign Language (2) | 2 |
| Total | 30 |

| 3 rd Semester | ECTS |
|---|-----------|
| Testing of Integrated Circuits | 4,5 |
| System Modeling and Verification – Analog | 3 |
| IC Evaluation | 2,5 |
| Elective Courses 1 | 10 |
| Analog and Mixed-Signal ICs for Communication Systems | 5 |
| Integrated Data Converters | 5 |
| System-on-Chip Architectures | 5 |
| Special Topics in VLSI/SoC/SiP Design – 1 | 5 |
| Elective Courses 2 | 10 |
| Advanced Topics in Digital Integrated Circuits | 5 |
| Integrated Sensors for Automotive Applications | 5 |
| Arithmetic Modules for VLSI/SoC Design | 5 |
| Special Topics in VLSI/SoC/SiP Design – 2 | 5 |
| Total | 30 |

| 4 th Semester | ECTS |
|--------------------------|------------|
| Master Thesis | 24 |
| Master Thesis Seminar | 6 |
| Total | 30 |
| Total Sum | 120 |

ECTS = European Credit Transfer System



I wanted to complete a master with a good deal of practice included in everyday lectures. This is provided by FH Kärnten - Carinthia University of Applied Sciences! I came from a rather theoretical university, so it was difficult to get used to this practice orientated education. But I was lucky to get amazing support from my classmates. We worked together in groups and the professors were very patient when explaining difficult topics.

FLORIDA DERVISHI, MSC (Albania)

DATES

Start: October 2023

Study guidance:

info@fh-kaernten.at | +43 5 90500 7700

FH Days and information events:

all dates at www.fh-kaernten.at/study-guidance

COSTS

Tuition fee: € 363,36 per semester

Student Union Fee: around € 22, annual adjustment

CONTACT

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