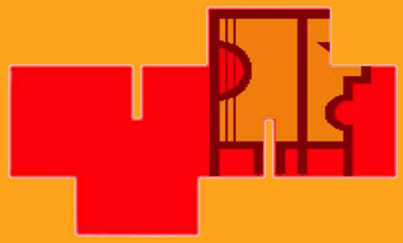
Institute of Electronic Music and Acoustics

Inffeldgasse 10
8010 Graz

Tel: +43-316-3893170
Email: office@iem.at

Contact



Electrical Engineering-
Audio Engineering

Graz University of Technology
Graz University of Music and Dramatic Arts

Introduction

Multidisciplinarity is the keyword to match the various requirements in the field of modern research and development.

The study programme of Electrical-/ Audio engineering at Graz University of Technology and Graz University of Music and Dramatic Arts has been designed with industrial and economic requirements in mind.

This type of cooperation between a University of Technology and a University of Arts is unique in European higher education.

Objectives

The graduates of this study programme are living proof that the traditionally strict barriers between technology and fine arts can be overcome efficiently.

Graduates are proficient in the following domains:

studio and recording engineering, the different fields of audiorelated acoustics, signal processing, communication technology, software development, contemporary music and multimedia arts.

The creativity promoted by the artistic education increases the graduates' skills solving problems and tasks as well as seeing them from an integral perspective.

Their practical experience in recording, critical listening and sound design, in addition to their scientific understanding, makes our graduates sought-after employees.

The artistic courses, being held in small groups, as well as the musical practice and experience contribute immensely to the development of team working abilities and communication skills.

This is reflected in the voluntary activities in student organizations. Two of them in particular are exceptionally active: the student agency of audio engineers is active in social and academic counselling of students plus improvement of the curriculum, and the AES Student Section Graz in providing further education and connections to industry and business.

References

SIEMENS

esa

ircam Centre Pompidou

AKG

ORF.at

ACOUSTA

JOANNEUM RESEARCH

Zebring TECHNOLOGY

Infineon technologies

ftw. Forschungszentrum Telekommunikation Wien

AUDIO SALES

PHILIPS

AVL

BFE

Antenne STEIERMARK

AUSTRIAN ACADEMY OF SCIENCES
ÖSTERREICHISCHE AKADEMIE DER WISSENSCHAFTEN

Professional pathways

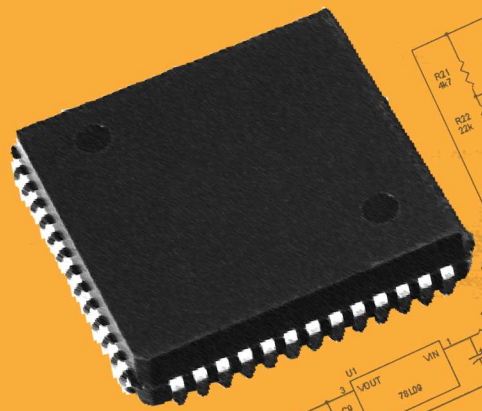
All over Europe, in the fields of studio techniques, signal processing and wherever new media technology meets arts, our graduates are in great demand:

- As developers of studio, live recording and Hifi equipment.

- As acousticians in the automotive industry as well as in noise abatement, planning processes in architectural acoustics, design of measurement applications and psychoacoustic test series, industrial sound design or in the development of hearing devices.

- As signal processing specialists for communication technologies, speech and audio processing algorithms.

- In the field of multi media as sound designers and music producers, broadcasting and recording engineers, experts for multichannel solutions or developers of audio applications.

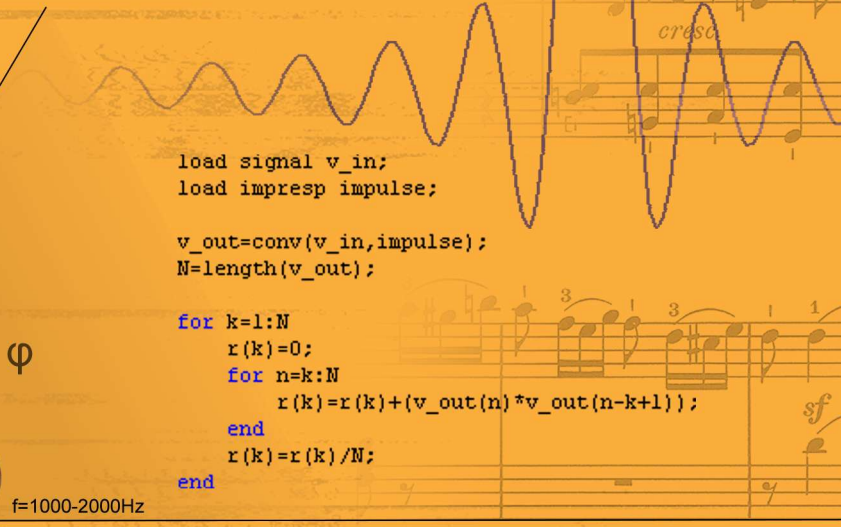


Curriculum

The first year of the bachelor program provides students with basic principles of mathematics, physics, electronics and computer science as well as musical theory and acoustics.

The second stage of study (year 2 and 3) continues with basic education and training in audio engineering and music and consolidates subject areas with a special focus on sound engineering (communication engineering, signal processing, acoustic measurement techniques, instrumentation, recording/studio equipment, electro-, room- and psycho-acoustics, digital audio engineering, electronic music etc.).

Students have to take ear-training courses and 4 semesters of instrumental lessons.



φ

f=1000-2000Hz

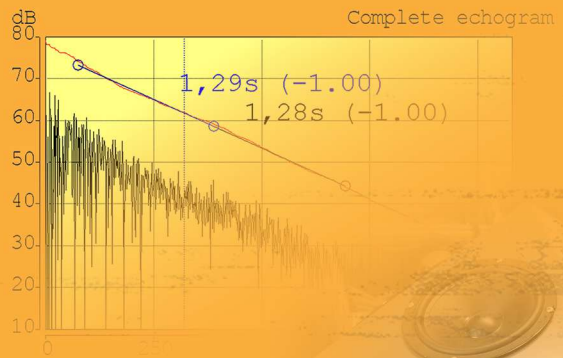
The master program provides students with specialized courses and elective subjects in order to direct their individual focus and is also devoted to the master thesis. At this stage, students can choose from the following major fields of study:

- Embedded Audio (communication engineering, measurement techniques, technical computer science and electronics,audio technics)

- Acoustics and recording engineering (acoustics, audio engineering, multi-channel recording, sound reinforcement engineering)

- Signal processing and speech communication (speech processing, sound synthesis, algorithms in acoustics, artificial intelligence)

- Computer music and multimedia (sound design, composition skills, multimedia applications)



$$\frac{\partial^2 p(x,t)}{\partial t^2} = c^2 \cdot \frac{\partial^2 p(x,t)}{\partial x^2}$$

A range of elective subjects, from automotive acoustics to economic and legal subject areas, rounds off the program. Project-related learning, self-organization and time management are taken into consideration in the courses. A comprehensive project provides students with an excellent preparation for the diploma/master thesis; it also gives them their first opportunity to get involved with the research activities of the institute.