

course beginning: spring spring

subject catalogue S23 K24

course code MTX720

name of course

Auditory Psychology and Acoustics

specification

for HE specialty, elective for others at MA level

academic instructor

A.Vurma

prerequisite course

no of terms

1

contact hr/total

30.0

hr/term

30.0

hr/week

2.0

ECTS/total

3.00

Lect

30.0

Grp

0.0

Ind

0.0

Sem

0.0

Pract

0.0

graded or pass/fail exams

E

term

1

ECTS

3.00

aim of the subject

To provide the students with the basic knowledge about (1) how sounds can be objectively described and what are the basic mechanisms of human sound perception, but also (2) about different aspects of sound propagation in various acoustical environments and about how these aspects have impact on how music is perceived and produced.

content

The main topics that will be addressed in the lectures: sound as the disturbance of the elastic environments, main parameters of the sound, objective ways to describe sounds, the buildup of the human hearing system, the perception of pitch, loudness, timbre and musical intervals, masking, critical bands, the psychophysics of dissonance and consonance, tuning systems, the perception of the sound source location, the propagation of soundwaves in various environments,

reflection, absorption, diffraction, refraction, interference, sounds in free field, standing waves, acoustical parameters of rooms, acoustical properties of various types of concert halls, room acoustics from the standpoint of the musicians, conductors and the audience.

learning outcomes

After successful finishing of this course, the student will be familiar with the basic knowledge on the hearing psychology and the acoustics. He/she is able to understand the dependence of musical culture on the physical world and human physiology as well as on the restrictions of human perception mechanisms.

assessment

During the written exam the student has to give short answers to about 15 individual questions concerning the meaning and content of basic concepts and terminology which were addressed in this course.

assessment criteria

Grade "A" or "excellent" - an outstanding and particularly broad-based level of achievement of the learning outcomes characterised by exceptional, free and creative use of the knowledge and skills;

Grade "B" or "very good" - a very high level of achievement of the learning outcomes characterised by proper and creative use of the knowledge and skills; more specific and detailed elements of knowledge and skills may reveal certain errors that are neither substantive nor serious;

Grade "C" or "good" - a high level of achievement of the learning outcomes characterised by proper use of the knowledge and skills; more specific and detailed elements of knowledge and skills may manifest certain uncertainty and imprecision;

Grade "D" or "satisfactory" - a sufficient level of achievement of the learning outcomes characterised by the ability to use the knowledge and skills in typical situations; non-typical situations reveal gaps and uncertainty;

Grade "E" or "sufficient" - a minimally acceptable level of achievement of the learning outcomes characterised by a limited ability to use the knowledge and skills in typical situations; non-typical situations reveal considerable gaps and uncertainty;

Grade "0" or "insufficient" - the knowledge and skills acquired by the student are below the minimum required level.

course reading material

Johan Sundberg (1995). Õpetus muusikahelidest (tõlge inglise keelest). Tln: Scripta Musicalia.

Avo-Rein Tereping (1988). Kuulmispsühholoogia. Tln: Valgus

David M. Howard & Jamie Angus (2006). Acoustics and psychoacoustics. Oxford: Focal Press.

Jürgen Meyer (2009). Acoustics and the performance of music. New York, NY: Springer.

Eric J. Heller (2013). Why you hear what you hear. Princenton, NJ: Princenton University Press.

author of course description

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