



DT2213 Musikalisk kommunikation och musikteknologi 7,5 hp

Musical Communication and Music Technology

När kurs inte längre ges har student möjlighet att examineras under ytterligare två läsår.

Fastställande

Kursplan för DT2213 gäller från och med VT09

Betygsskala

A, B, C, D, E, FX, F

Utbildningsnivå

Avancerad nivå

Huvudområden

Datalogi och datateknik

Särskild behörighet

Undervisningsspråk

Undervisningsspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

Lärandemål

The overall goal is obtain a thorough scientific understanding of the basic principles for how music is communicated from a musician to a listener and be able to apply this knowledge in music applications, including new ways of musical interactions.

The student should after the course be able to

- identify and describe the major principles for musical communication including structural, emotional and gestural expression,
- describe and analyze the control aspect of musical instruments regarding limitations, expressive freedom and parameter mapping,
- critically read a scientific paper in music communication and extract useful information,
- use commercial software tools (sequencers, synthesizers) for symbolic music (MIDI) manipulation,
- implement a pd (pure-data) patch for basic sound synthesis and manipulation of musical control data in real-time.

Kursinnehåll

The communication chain, the role of the musician versus computer-generated performances.

Marking musical structure: tempo, phrasing, harmonic and melodic tension, repetitive patterns and grooves, articulation, accents, ensemble timing.

Emotional expression: The composition's inherent expression, acoustical cues, mapping of emotions, synthesis, automatic recognition, comparisons with other types of expression (facial, gesture, speech), cultural versus innate codes.

Allusions to motion: Inferences from dance and other human motion patterns, final ritardando, hand gestures.

The musical context: Concert, background, film music.

Technical aspects: Synchronization, randomness. The MIDI standard: coding, controls, Standard MIDI files, General MIDI. Synthesis: Sample players, sound libraries, sampling, looping and physical modeling.

Computer tools: pd (pure data), Director Musices, sound editors, sequencers, notation editors, samplers, audio analysis, gesture analysis.

This course will not cover topics that are already dealt with in 2E1390/EN2100 Auditory Perception and 2F1410/DT1410 Audio Technology. The overlap is also small with 2F1212/DT2212 Music Acoustics, which deals mainly with the physical and acoustical properties of instruments.

Kurslitteratur

Selection of scientific papers mainly summaries of each area. For sale at the department.

Rekommenderad bredvidläsning:

Robert Rowe (2001) Machine Musicianship, The MIT press, March 2001

ISBN 0-262-18206-8, 416 pp. includes CD-ROM

for sale at Kårbokhandeln

Juslin, PN & Sloboda, JA, Eds. (2002), Music and emotion: Theory and research. New York: Oxford University Press.

R. Parncutt & G.E. McPherson: The Science and Psychology of Music Performance, Creative Strategies for Teaching and Learning, Oxford University Press, 2002.

Examination

- LAB1 - Laborationer, 1,5 hp, betygsskala: P, F
- PRO1 - Projekt, 1,5 hp, betygsskala: P, F
- TEN1 - Tentamen, 4,5 hp, betygsskala: A, B, C, D, E, FX, F

Examinator beslutar, baserat på rekommendation från KTH:s handläggare av stöd till studenter med funktionsnedsättning, om eventuell anpassad examination för studenter med dokumenterad, varaktig funktionsnedsättning.

Examinator får medge annan examinationsform vid omexamination av enstaka studenter.

Övriga krav för slutbetyg

Passing of a written exam (4,5 university credits), a group project (1,5 university credits) and a laboratory schedule (1,5 university credits).

Etiskt förhållningssätt

- Vid grupparbete har alla i gruppen ansvar för gruppens arbete.
- Vid examination ska varje student ärligt redovisa hjälp som erhållits och källor som använts.
- Vid muntlig examination ska varje student kunna redogöra för hela uppgiften och hela lösningen.