



# DT2213 Musikalisk kommunikation och musikteknologi 7,5 hp

## Musical Communication and Music Technology

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Kursplan för DT2213 gäller från och med VT09

**Betygsskala:** A, B, C, D, E, FX, F

**Utbildningsnivå:** Avancerad nivå

**Huvudområde:** Datalogi och datateknik

### 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.

### Kursens huvudsakliga innehåll

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.

## Undervisningspråk

Undervisningspråk anges i kurstillfällesinformationen i kurs- och programkatalogen.

## Behörighet

## Litteratur

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

## 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).