

Unofficial translation from the original Finnish document

## MUSIC TECHNOLOGY

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To study a subject area, students must first take the Level I course and then progress through Levels II to V: preparatory, basic, advanced, professional and expert.

## UNIT DESCRIPTIONS

### Module: RECORDING ARTS & MUSIC PRODUCTION

#### S-MT1 Recording and sound production 1 (4 cr)

##### Learning outcomes

A student who has completed the unit is expected to:

- be familiar with the history of recording music
- be familiar with recording equipment typically used in recording studios
- be familiar with the operating principles and use of microphones
- be familiar with typical work procedures in recording
- be able to make recordings independently in a multi-track studio
- be familiar with the stages of the recording production process

##### Assessment

On a scale of 0 to 5

##### Prerequisites

*Music technology tools studies*

##### Recommended year of completion

1st year

##### Level I

##### Target group

Students at the Sibelius Academy whose main subject is Music Technology

**Completion**

Active class attendance

Homework

**Teaching and learning methods**

Small group tuition, 79 h

Homework, 31 h

**Coordinating teacher**

Miikka Huttunen

**Tuition language**

Finnish / English

**Keywords**

Studio, microphone, recording, studio work, popular music

**S-MT2 Recording and sound production 2 (8 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the special features of recording production in various music styles
- know how to record various styles of popular music
- have improved competence in how to use a recording studio and its equipment
- be aware of the interactions between a recording engineer, producer and musicians and their work procedures in various recording and amplification situations

**Assessment**

On a scale of 0 to 5

**Recommended year of completion**

2nd year

**Level II**

**Target group**

Students at the Sibelius Academy whose main subject is Music Technology

**Completion**

Active class attendance

Homework

**Teaching and learning methods**

Small group tuition, 131 h

Homework, 89 h

**Coordinating teacher**

Miikka Huttunen

**Tuition language**

Finnish / English

**Prerequisites**

*S-MT1 Recording and sound production 1*

**Target group**

Students whose main subject is Music Technology

**Keywords**

Studio recording, ensembles, microphone techniques, recording

### **S-MT3 Recording and sound production 3 (8 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be conversant with mixing recordings of popular music
- be conversant with surround sound recording and mixing

#### **Assessment**

On a scale of 0 to 5

#### **Recommended year of completion**

3rd year

#### **Level III**

#### **Target group**

Students at the Sibelius Academy whose main subject is Music Technology

#### **Completion**

Active class attendance

Homework

#### **Teaching and learning methods**

Small group tuition, 131 h

Homework, 89 h

#### **Coordinating teacher**

Miikka Huttunen

#### **Tuition language**

Finnish / English

#### **Prerequisites**

*S-MT2 Recording and sound production 2*

#### **Keywords**

Mixing, surround sound, multi-channel sound, film music, sound processing

### **S-MT6 Mixing workshop 1 (6 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be able to develop a personal approach to audio mixing
- have the technical competence to execute his/her visions

#### **Teaching and learning methods**

The unit is an introduction to audio mixing as a technical and artistic process through exercises and examples. The focus is on individual creative work with various musical styles and on analysing student projects in the group.

#### **Completion**

Completion requires active class attendance (80%) and completing all assignments.

#### **Assessment**

pass/fail

#### **Recommended year of completion**

4th year

#### **Level IV**

#### **Target group**

Students at the Sibelius Academy whose main subject is Music Technology

#### **Coordinating teacher**

Risto Hemmi

**Tuition language**

Finnish

**Prerequisites**

*S-MT3 Recording and sound production 3*

**Keywords**

Mixing

**S-MT7 Mixing workshop 2 (6 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be able to manage large, challenging projects
- have a command of surround sound mixing for various purposes

**Teaching and learning methods**

The unit is an in-depth study of audio mixing projects through exercises and examples. The focus is on individual creative work with various musical styles and on analysing student projects in the group.

**Completion**

Completion requires active class attendance (more than 80%) and completing all assignments.

**Assessment**

pass/fail

**Recommended year of completion**

5th year

**Level V**

**Target group**

Students at the Sibelius Academy whose main subject is Music Technology

**Coordinating teacher**

Risto Hemmi

**Tuition language**

Finnish

**Prerequisites**

*S-MT6 Mixing workshop 1*

**Keywords**

Mixing, surround sound

**S-MT8 Artistic production of popular music 1 (8 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- understand the various roles and pressures of an artistic producer in the recording production chain
- understand the producer's responsibility for quality control of the recording
- be familiar with the various technical, commercial and logistical stages of the recording production process
- be familiar with various production practices and models in modern popular music
- understand the current state of the commercial popular music industry (recording industry, radio, media)
- be familiar with pressure points in the production process and know ways to resolve them

- understand what makes a hit
- be familiar with the history of producing popular music from the 1930s to the 2010s
- understand the impact of technological advancement on production practices
- be aware of his/her personality as a producer
- be aware of the producer's role as a professional opportunity for himself/herself

#### **Assessment**

On a scale of 0 to 5

#### **Recommended year of completion**

4th year

#### **Level IV**

#### **Target group**

Students at the Sibelius Academy whose main subject is Music Technology

#### **Teaching and learning methods**

Small group tuition, expert lectures

Thematic discussion in a lecture format

Analysis of music samples

Discussion and deliberation on the various aspects of a producer's role

Analysing current productions

Studying and analysing production case studies

Evaluation and further development of student productions

#### **Completion**

Active class attendance

#### **Coordinating teacher**

Riku Mattila

#### **Tuition language**

Finnish

#### **Prerequisites**

*S-MT3 Recording and sound production 3*

#### **Keywords**

Music production, popular music, producer, history of music

### **S-MT9 Artistic production of popular music 2 (8 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have produced a musical track for the commercial market from start to finish during the unit
- have studied, analysed and organised a production scheme for a specimen performer
- be familiar with production modes suitable for various genres
- have come across all aspects of being a producer in the course of the process
- understand how vital it is to manage the psychological dimension of the production process
- understand how vital it is to take personal artistic risks in order to succeed
- understand how unpredictable the process is and how important troubleshooting skills are
- understand that unless he/she assumes personal responsibility, nothing will happen

#### **Assessment**

On a scale of 0 to 5

#### **Recommended year of completion**

5th year

**Level V**

**Target group**

Students at the Sibelius Academy whose main subject is Music Technology

**Teaching methods**

Project launch and follow-up sessions in the group

Producing music independently with a performer

Critique sessions and improving the production on the basis of those

**Completion**

Active class attendance

Independent producing of music

**Coordinating teacher**

Riku Mattila

**Tuition language**

Finnish

**Prerequisites**

*S-MT3 Recording and sound production 3*

*S-MT8 Artistic production of popular music 1*

**Keywords**

Music production, popular music, producer, history of music

**S-MT10 Recording classical music 1 (4–5 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the most common types of ensemble in classical music
- be familiar with the most common miking practices and be able to apply them in practice in recording projects
- be able to design and organise a recording project on the basis of a musical score

**Assessment**

pass/fail

**Completion and feedback**

Active class attendance

Participating in recording projects

Mixing and mastering recordings (Sadie, Pro Tools)

Presenting a recording project to the group

Oral feedback

**Teaching and learning methods**

Lectures and listening to music in class, maximum 35 h

Project supervisor sessions, maximum 10 h

(maximum 10 students)

Assignments, maximum 15 h

Recording projects in a small group, maximum 48 h

Optional extra work, maximum 27 h

**Tuition language**

Finnish

**Prerequisites**

*Music technology tools studies*



**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 1st to 2nd year

**Level I****Target group**

Students whose main subject is Music Technology

**Coordinating teacher**

Matti Heinonen

**S-MT11 Recording classical music 2 (8–11 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- be able to independently design, organise and deliver a recording project
- have a command of mixing and mastering in a recording project
- have been involved in or observed one major recording project (symphony orchestra, opera, etc.)

**Assessment**

pass/fail

**Prerequisites**

*S-MT10 Recording classical music 1*

**Completion and feedback**

Active class attendance

Managing recording projects, including study of repertoire, recording, mixing and mastering (2 to 4 projects)

Participating in excursions and involvement in a major recording project

Presenting a recording project to the group

Oral feedback

**Teaching and learning methods**

Lectures and listening to music in class, maximum 30 h

At least two recording projects managed alone or in a group of maximum 2–3 students (solo performance, chamber music, choir, etc.), 40 h

Excursions (e.g. Finnish Broadcasting Company (YLE), commercial studios, Opera), maximum 15 h

Recording project of a symphony orchestra or opera in a small group (maximum 5 students), maximum 40 h

Mixing and mastering of own projects, maximum 90 h

Project supervisor sessions, maximum 20 h

Extra projects as determined by the supervising teacher, maximum 81 h (maximum 10 students)

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 2nd to 3rd year

**Level II****Tuition language**

Finnish

**Target group**

Students whose main subject is Music Technology

**Coordinating teacher**

Matti Heinonen

**S-MT12 Synthesizer in popular music (8 cr)**

Introduction to the use of synthesisers in popular music. Students complete exercises, meet professionals in the field and study how they work.

**Learning outcomes**

A student who has completed the unit is expected to:

- have an in-depth awareness of various types of sound synthesis
- have an in-depth familiarity with the use of synthesisers in various styles of popular music
- be familiar with workstation environments in synthesiser-based music

**Assessment**

On a scale of 0 to 5

**Recommended year of completion**

4th year

**Level IV**

**Target group**

Students at the Sibelius Academy whose main subject is Music Technology

**Completion**

Active class attendance

Homework

**Teaching and learning methods**

Small group tuition, 104 h

Homework, 110 h

**Coordinating teacher**

Miikka Huttunen

**Tuition language**

Finnish / English

**Prerequisites**

*S-MT3 Recording and sound production 3*

**Keywords**

Sound synthesis, popular music, sequencer, sampler, synthesiser

**S-MT82 Sound production assistantship (7–21 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be able to work as a team member on a music or research project
- understand his/her duties thoroughly and to design and deliver his/her contribution independently and reliably
- be able to keep up with work in the project group in technical, artistic and social terms and to have a good command of the required skills

**Assessment**

The teacher and one colleague assess the unit on a scale of 0 to 5.

**Completion and feedback**

Practical exercises, planned work situations

Reporting and documenting

Written feedback

**Teaching and learning methods**

Individual tuition, maximum 4 h per 1 cr, 28–84 h but maximum 30 h

Independent work on projects, 103–477 h

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year onwards

**Target group**

**Coordinating teacher**

To be appointed by the head of the department as required

**Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS).

The unit may include working as a composer's assistant on an electroacoustic composition project in a studio, designing and configuring digital and analogue devices for live electronics performances, or troubleshooting technology-based improvisation problems as a technical and artistic assistant.

**S-MT83 Recording and sound production exercise (1–20 cr)**

**Learning outcomes**

The production exercise concerns a technical and artistic recording or sound production project that supports the student's main subject studies and is approved by the teacher.

**Assessment**

pass/fail, with a statement from the instructor

**Completion and feedback**

Design, delivery and documentation of the exercise. The student may complete multiple production exercises.

Oral feedback

**Teaching and learning methods**

Individual tuition as needed, maximum 1 h per 1 cr

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year onwards

**Target group**

Students whose main subject is Music Technology

**Tuition language**

Finnish / English

**Level**

-

**Coordinating teacher**

To be appointed by the head of the department according to the student's needs

**Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS). In a production exercise, the student works independently or as a member of a team.

## **S-MT75 Recording and sound production project (3–18 cr)**

### **Learning outcomes**

The student is required to prepare a work plan for the project, which is then to be approved by the supervising teacher.

### **Assessment**

pass/fail or on a scale of 0 to 5 (as agreed with the supervising teacher)

### **Prerequisites**

To be agreed with the supervising teacher

### **Completion and feedback**

As per the work plan approved by the supervising teacher

Reporting

### **Teaching and learning methods**

Independent work or group work as per the work plan approved by the supervising teacher, 27 h per 1 cr; guidance and studio time as per the project plan.

### **Timing**

Tuition given every year

### **Recommended year of completion**

Master's 1st to 2nd year

### **Unit overview**

This project is a unit including a written portion and a practical portion as agreed with the supervising teacher appointed by the head of the department. The topic of the project must have to do with the student's main subject. The aim is to engage in an analytically oriented, controlled and supervised project that fulfils predetermined goals in terms of skills and knowledge acquired. Literature projects, seminars, literature examinations and minor research projects may also be accepted as a completion of this unit.

## **Module: LIVE SOUND (Sound reinforcement)**

### **S-MT15 Basics of live sound (4 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the common principles and means of modern venue amplification for concerts
- be familiar with the various skill areas of amplification and with the special technical features of amplification for various styles of music

#### **Assessment**

pass/fail

#### **Prerequisites**

*Music technology tools studies*

#### **Completion and feedback**

Active class attendance (80%)

Completing assignments on schedule

Professional conduct

Oral feedback

#### **Teaching and learning methods**

Lectures, maximum 45 h  
 Group exercises for various styles of music  
 Independent or supervised work at actual concerts  
 Analysis and reporting on concerts from the perspective of amplification

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 1st year

**Target group**

Students whose main subject is Music Technology

**Level I**

**Tuition language**

Finnish / English

**Coordinating teacher**

Niko Laasonen

**Unit overview**

The unit is an introduction to modern amplification systems:

- designing and setting up simple amplification systems
- mixing at a concert
- reviewing common work practices

**S-MT16 Live sound, training (2–4 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be able to work as a technical assistant at a concert
- be able to work as the senior technician at a concert with a technically and artistically simple setup

**Assessment**

pass/fail

**Prerequisites**

*S-MT15 Basics of live sound*

**Completion and feedback**

Oral feedback

**Teaching and learning methods**

Assignments

Group tuition for planning

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 2nd year

**Target group**

Students whose main subject is Music Technology

**Level II**

**Tuition language**

Finnish / English

**Coordinating teacher**

Niko Laasonen

**Unit overview**

The purpose of this unit is to apply in practice the skills learned in the unit S-MT15.

**S-MT17 Live sound, advanced (4 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- be able to act independently as the senior sound engineer at a technically and artistically complex concert
- have improved his/her competence regarding the technical and aesthetic requirements of a particular music style

**Assessment**

pass/fail

**Prerequisites**

*S-MT16 Live sound, training*

**Completion and feedback**

Design and delivery of an amplification system for a concert on schedule

Analysis and reporting on concerts from the perspective of amplification

Oral feedback

**Teaching and learning methods**

Assignments, independently completed and individually supervised

Group tuition, maximum 45 h

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 3rd year

**Target group**

Students whose main subject is Music Technology

**Level III****Tuition language**

Finnish / English

**Coordinating teacher**

Niko Laasonen

**Unit overview**

The unit is an introduction to the aesthetic requirements placed on the technical execution of amplification systems in concert for various styles of music.

Students may specialise in one of the following areas:

- Technical and aesthetic requirements of a particular style of music
- Complex amplification systems
- Demanding professional projects

**Module: MEDIA AND SONIC ARTS****S-MT18 Media and sonic arts 1 (4–8 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- understand the various species of media and sonic art and how they relate to one another
- recognise the technologies and practices employed in this field
- be familiar with the basic concepts of media and sonic arts
- be aware of the historical development of the genre

### **Assessment**

pass/fail

### **Completion and feedback**

Active class attendance (80%)

Completing assignments by the deadline given

Professional conduct

Participation in group work

Oral feedback

### **Teaching and learning methods**

Lessons, maximum 52 h

Small group tuition, lectures, visits to sound and media art exhibitions and events, reviewing literature and having literature discussions, small-scale research projects, reports and performance exercises, organising information with concept maps.

Independent work in reading literature and preparing presentations, minimum 47 h; also, developing and presenting a small-scale project, maximum 107 h

### **Timing**

Tuition given every other year in the spring semester

### **Recommended year of completion**

Bachelor's 1st year

### **Level I**

#### **Tuition language:**

Finnish / English

according to the needs of the group

#### **Target group**

Also suitable for other students at the University at any point in their studies.

#### **Coordinating teacher**

Marianne Decoster-Taivalkoski

#### **Unit overview**

The purpose of the unit is to introduce students to the history, basic concepts, technologies and practices of media and sonic arts.

## **S-MT19 Media and sonic arts 2 (8–11 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with work practices in media and sonic arts projects
- understand the processes involved in launching and executing media and sonic arts projects
- be familiar with the general logic of project work
- be able to self-evaluate his/her competence

### **Assessment**

pass/fail

### **Prerequisites**

Prior completion of *S-MT18 Media and sonic arts 1* is recommended but not required.

**Completion and feedback**

Active class attendance (80%)  
 Completing assignments by the deadline given  
 Professional conduct  
 Participation in group work  
 Oral feedback

**Teaching and learning methods**

Small group tuition, maximum 120 h  
 Techniques and practices in the genre addressed in workshops, small group tuition, independent work, small-scale research projects, exercises, reviewing literature, having literature discussions and conducting media analyses

**Timing**

Tuition given every other year in the autumn and spring semesters

**Recommended year of completion**

Bachelor's 2nd year

**Target group**

Also suitable for other students at the University at any point in their studies.

**Tuition language**

Finnish / English

**Level II****Coordinating teacher**

Marianne Decoster-Taivalkoski

**S-MT20 Media and sonic arts, advanced (8 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the work practices and stages involved in media and sonic arts projects
- be able to develop his/her own personal creative processes
- be able to describe his/her artistic choices in words and to self-evaluate them
- be able to take a research approach to his/her work
- be capable of self-guidance
- have practical skills in critical listening and sound analysis in the field of media and sonic arts
- have established the basics of his/her personal artistic discourse and be able to place his/her goals in a wider artistic context in the field of media and sonic arts
- be able critically to appraise his/her own work and the work of other professionals in the field of media and sonic arts
- be able to listen to, interpret and understand the needs and arguments of various persons in the working group and to take these into account in his/her work

**Assessment**

pass/fail

**Prerequisites**

Students are required to have a command of basic audio technology and programming.

**Completion and feedback**

Active class attendance (80%)  
 Completing assignments by the deadline given  
 Professional conduct



Participation in group work

Oral feedback

**Teaching and learning methods**

Lessons, maximum 104 h

Group work in a multiform media and sonic arts project, discussions, reflections, written assignments

**Timing**

Tuition given every other year in the autumn and spring semesters

**Recommended year of completion**

Bachelor's 3rd year onwards

**Target group**

The unit is intended for students in Music Technology, sound design in performing arts and Sound in New Media, and also for advanced students in Sound Art.

**Tuition language**

Finnish / English

**Level III–IV**

**Unit S-MT20 may include workshops from unit S-MT9.**

**Coordinating teacher**

Marianne Decoster-Taivalkoski

**S-MT21 Exploratorium on sonic and corporal gestuality (4–8 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be able to define, describe and develop his/her artist identity
- have an understanding of the field of research on sonic and corporal gestuality
- be aware of ethical practices and conduct in collaborative artistic research
- have made a contribution related to his/her art form to the practice-based research project
- be able to integrate the views and inputs of other group members into his/her own thinking in a constructive way
- have a command of the process of test arrangements drawn up collaboratively
- have improved his/her group improvisation skills in a cross-art context

**Assessment**

pass/fail

**Completion and feedback**

Active class attendance (80%)

Completing assignments by the deadline given

Active participation in group work

Oral feedback

**Teaching and learning methods**

Group work, lab work methods, maximum 52 h

Group discussion and information processing during sessions, independent work and writing an article, 40–94 h

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 1st year onwards, also suited for doctoral students

**Target group**

For anyone at the University of the Arts Helsinki interested in gestuality and artistic research

**Coordinating teacher**

Marianne Decoster-Taivalkoski

**Unit overview**

The purpose of this research group, which is recommendable for students from a wide range of backgrounds, is to execute a research project in experimental artistic research at weekly meetings. The object of the research is the relationship of sonic and corporal gestuality: the impulses passed between them and the reflections, changes, tensions, resistance and partnership that emerge between them, particularly when performing in the same space at the same time. Students are encouraged to identify, describe and develop their artist identity and thereby provide input for the research. The meetings include group improvisation, reflection and discussion, and planning of experiments around the research questions brought up by the group. By repeating these actions, the group builds up a body of knowledge that is documented as field notes, learning diaries, articles, sketches, drawings, performances and other ways thought up by the group members.

## **Module: ELECTROACOUSTIC MUSIC**

### **S-MT22 Preparatory course in electroacoustic music (8 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- recognise and identify various genres of electroacoustic music
- have a command of the basics of electroacoustic music composition: sound processing, sound synthesis, sound spatialisation and mixing for electroacoustic music
- be familiar with and have experience of using the basic studio tools for electroacoustic music: sequencers, microphones, speakers, synthesisers
- have developed their listening skills for working with diverse sound materials
- have experimented with and used field recording techniques.

**Assessment**

Pass/fail

**Prerequisites**

Experience with the use of personal computers. Basic knowledge of music theory is preferred but not mandatory.

**Completion and feedback**

Active participation in the classes and discussion

Reading and monitoring of learning materials

Completion of assignments given by the teacher

Completion of the composition assignments

Students are given oral feedback at the end of the unit.

**Coordinating teacher**

Alejandro Olarte

Sami Klemola

**Tuition language**

English

**Target group**

Music Technology students  
 Composition-oriented students  
 Sound Art students  
 Sound design students  
 University of the Arts students  
 JOO students  
 Open University students

**Unit overview**

The unit is divided into two semesters. During the first semester, students are introduced to the electroacoustic music genre and learn to use the basic tools needed for composing an electroacoustic music piece for fixed media. During the second semester, the focus will be on mixed music and students will compose a sketch for a solo instrument and tape (fixed media or pre-recorded material). This semester has a practical approach: during the sessions students gain practical experience in using various tools in exercises given by the teachers. Students are also required to do independent work.

**Teaching and learning methods**

Lectures and group instruction, 107 h  
 Reading, homework and studio work, maximum 107 h

**Recommended year of completion**

Bachelor's 1st year, Master's 1st year  
 1st year Music Technology Students

**Timing**

Tuition given every year

**Level I****S-MT23 Acousmatic music composition and theory (4–6 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- understand the basic concepts of acousmatic music (sound composition, sound organization, composing for fixed media, multichannel composition)
- be able to recognise and characterise the acousmatic sub-genre of electroacoustic music through listening and analysis of repertoire
- be able to discuss the history and theoretical background of acousmatic music
- be able to operate electroacoustic music studio tools for sound processing, sound recording and synthesis, multichannel sound spatialisation
- have composed a piece in the acousmatic genre

**Assessment**

pass/fail

**Prerequisites**

*S-MT22 Preparatory course in electroacoustic music*

**Completion and feedback**

Active participation in the classes and discussion  
 Reading and monitoring of learning materials  
 Completion of assignments given by the teacher  
 Completion of the composition assignment

Students are given individual oral feedback after completing their composition.

**Coordinating teacher**

Alejandro Montes de Oca

**Tuition language**

English

**Target group**

Music technology students

Composition oriented students

Sound Art students

Sound design students

University of the Arts students

Joo students

Open University students

**Unit overview**

In the course of one semester, students acquire the necessary knowledge for composing an acousmatic music work. Special focus is given to the studio techniques required for acousmatic composition: sound processing, sound analysis and sound spatialisation. Dedicated listening and analysis sessions introduce the repertoire, history and theories of the sub-genre. Students compose one multichannel and one stereo piece for fixed media. Students are required to do independent work in the studio.

**Teaching and learning methods**

Lectures and group instruction, 53 h

Reading, homework and studio work, maximum 107 h

**Recommended year of completion**

Bachelor's 2nd to 3rd year, Master's 1st year

2nd and 3rd year Music Technology Students

**Timing**

Tuition given every year

**Level III**

**S-MT24 Electroacoustic music workshops (4 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- a. have an expanded and in-depth knowledge of electroacoustic repertoire
- b. have learned to produce material using sound synthesis
- c. have acquired command of a wide range of sound processing and mixing tools
- d. have created a circuit for live processing of an instrument and have demonstrated it
- e. have a command of basic techniques in the amplification and performance of electroacoustic music

**Assessment**

On a scale of 0 to 5

**Prerequisites**

*S-MT22 Preparatory course in electroacoustic music*

**Completion and feedback**

Learning outcomes 'a', 'c' and 'e':

- 1) Active class attendance and participation in the teaching and discussion
- 2) Monitoring of the use of teaching materials, possibly a listening examination

Learning outcomes 'b' and 'd':

3) Completing assignments

Oral feedback

**Coordinating teacher**

Sami Klemola

**Tuition language**

Finnish

**Target group**

Music Technology students

Composition oriented students

Sound Art students

**Unit overview**

The unit is a composition workshop whose purpose is to create a piece for an electroacoustic ensemble (defunensemble).

**Teaching and working methods**

Lectures and group tuition, maximum 32 h

Reading, homework and studio assignments, maximum 75 h

**Recommended year of completion**

Bachelor's 3rd year, Master's 1st year

**S-MT25 Electroacoustic music seminar (4 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have a wider understanding of the electroacoustic music context
- be able to discuss, explain and integrate a strong understanding of the subject chosen for his/her presentations, covering various aspects of the electroacoustic music field

**Assessment**

pass/fail

**Prerequisites**

Some previous familiarity or experience with electroacoustic music is preferred, but not essential.

**Completion and feedback**

Class attendance (80%)

Presentation

Professional conduct

Participation in group work

Students are given oral feedback.

**Coordinating teacher**

Josué Moreno

Andrew Bentley

**Language**

English

**Target group**

This course is intended for any university student with an interest in electroacoustic music.

**Unit overview**

The Electroacoustic Music Seminar provides a friendly forum for feedback and discussion, in which students present either their own electroacoustic work, or give presentations on electroacoustic music topics which interest them. 'Electroacoustic' here is understood in the broadest possible terms, extending to sound design, other forms of electronic music, etc. The course will also include

sessions on topics associated with electroacoustic culture and practice, including techniques, composers, specific works, visits to galleries and installations, visiting composers, etc.

Keywords: composition, installation, studio technics, sound designer, signal processing, music and narration, forum

### **Teaching and learning methods**

The unit consists of bi-weekly 2-hour sessions for one academic year.

The forum is largely self-directing and arises from the student's own interests and projects. However, students may decide to:

- read articles and book chapters and discuss them in the sessions
- familiarise themselves with the work of the other participants and give them feedback during the sessions
- prepare a presentation about a topic of their choice, or about their own projects, either completed or work in progress

Attending concerts and events, and talks by invited lecturers, form part of the unit activities depending on the events calendar in the city.

Small group tuition, 40 h

### **Recommended year of completion**

Any

**Level I–II**

## **S-MT26 Electroacoustic sound diffusion (4 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the design principles of primary existing loudspeaker orchestras;
- be familiar with the primary aesthetic considerations;
- be familiar with the essential elements of diffusion performance technique;
- have a basic fluency in diffusion performance.

### **Assessment**

Pass/fail

### **Prerequisites**

*S-MT22 Preparatory course in electroacoustic music* or equivalent experience with electroacoustic music.

### **Completion and feedback**

Active class attendance (90%)

Active participation in the workshop and concert

Preparation of the performance of at least one electroacoustic piece

Students are given individual oral feedback after completing the unit and the concert.

### **Coordinating teacher**

Dom Schlienger

Andrew Bentley

### **Tuition language**

English

### **Target group**

Music Technology students

Composition-oriented students

Sound Art students

Sound design students

Open University students

### **Unit overview**

This unit explores the concepts, methods and techniques of sound diffusion as a performance practice. Using a multichannel array of loudspeakers and mixing desks, the unit provides an opportunity to experiment and become acquainted with performance techniques of electroacoustic and acousmatic music. It is also a laboratory for developing critical views on surrounding listening environments and for being introduced to electroacoustic music repertoire.

### **Teaching and learning methods**

Lectures and group instruction for 4 hours

Reading, homework and preparation work up to 53 hours

Listening sessions on the system

Group instruction and individual instruction

Performance techniques workshop

Individual practicing time

Concert or public demonstration

### **Recommended year of completion**

Bachelor's 1st to 3rd year, Master's 1st year

Other students with some background and experience with electroacoustic music

### **Level III**

## **S-MT52 Electroacoustic composition (4–6 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the technical basics and modes of expression in electroacoustic composition
- have gained experience in creating acousmatic ('tape') music and live electronic music

### **Assessment**

Examination board assessment on a scale of 0 to 5

### **Prerequisites**

*Electroacoustic music*

### **Completion and feedback**

Active class attendance

Submitting assignments for inspection

Submitting an exercise and composition portfolio of at least 2 works (depending on the credit score) for assessment

Oral feedback

### **Coordinating teacher**

Alejandro Montes de Oca

Sami Klemola

### **Tuition language**

Finnish / English

### **Target group**

Music Technology students

Composition-oriented students

### **Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS). The unit may be completed in several parts.

**Teaching and learning methods**

Individual tuition, maximum 24 h per academic year

Completing the assignments given

**Recommended year of completion**

Bachelor's 3rd year

**Level III****Module: EXPERIMENTAL PERFORMANCE WITH ELECTRONICS R&D****S-MT27 Live Electronics Atelier (6 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- be able to study, discuss and comprehend the principles for electronic sound generation through the study of electronic instruments.
- have investigated the repertoire of electroacoustic and experimental music in a historical and aesthetic perspective.
- have experimented with and analysed the performance of analogue and digital instruments

**Assessment**

On a scale of 0 to 5 or pass/fail

**Prerequisites**

Basic level of audio technology, music performance, composition and music theory. Previous contact with sound art or experimental music. Interest in electroacoustic music.

**Completion and feedback**

Active class attendance (70%)

Professional conduct

Participation in group work

Participation in final concert (30%)

Students are given oral feedback at the end of the unit.

**Coordinating teacher**

Alejandro Olarte

**Tuition language**

English

**Target group**

Music Technology students

Performance-oriented students

Sound Art students

Sound Design students

University of the Arts students

JOO students

Open University students

**Unit overview**

The unit is an introduction to the use of electroacoustic means in a musical performing context.

Participants explore and systematically study a set of instruments, works and concepts relevant to the genre. These include instruments and devices such as radios, tape recorders, piezo disks,



turntables, mixing desks, effect processors, synthesisers and midi controllers. The unit includes studying the work of composers and performers such as Alvin Lucier, David Tudor, Stockhausen, John Cage, Iannis Xenakis, Nakamura. In practical sessions, participants experiment, handle and become acquainted with the performance of electroacoustic devices and the musical language associated with them. Participants are required to develop and present a performance project involving the concepts and instruments studied during the unit.

### **Teaching and learning methods**

The unit includes group workshops, practical sessions, individual projects, presentations, reading, listening and researching the repertoire and concepts. A final concert demonstration is held at the end of the unit.

### **Recommended year of completion**

Bachelor's 1st to 2nd year, Master's

### **Level I**

## **S-MT28 Electroacoustic improvisation (1 cr per period of 27 h)**

The unit is given as six periods over one academic year. Students may only sign up for one period. Each period consists of 21 h of sessions over two days and 6 h of individual work.

### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the theory and practice of electronic improvisation
- have experimented with various approaches to performing analogue, digital, electronic, electroacoustic instruments in a collective or individual set through exercise assignments
- have designed, developed, delivered and interpreted a performing environment including an electronic dimension
- have discussed and investigated the aspects and possibilities of electroacoustic instruments

### **Assessment**

On a scale of 0 to 5 or pass/fail

### **Prerequisites**

Basic understanding of audio technology with software and hardware, sequencers (DAW: Ableton Live, Max, Supercollider), synthesizers, sound processors, mics. Experience in playing amplified instruments.

Solid experience in music performance, basic competence in composition and music theory. Previous contact with experimental performance practices.

### **Completion and feedback**

Active class attendance (90%)

Professional conduct

Participation in group work

Students are given oral feedback at the end of the unit.

### **Coordinating teacher**

Alejandro Olarte

### **Tuition language**

English

### **Target group**

Music Technology students

Performance-oriented students

Sound Art students

JOO students

Open University students

### **Unit overview**

This intensive set of workshops is a laboratory for experimenting with and studying the musical potential of electronic, analogue, digital and acoustic instruments in the context of electroacoustic music performance.

The practical sessions are focused on playing and improvising music in a band, small groups and solo settings. The contents are organised as a ground play to explore the theory and practice of electronic improvisation and to assess the vocabulary of electroacoustic music performance.

The unit is intended for performance-oriented Bachelor's-level or Master's-level students in any discipline who are interested in electroacoustic music performance.

### **Teaching and learning methods**

The unit includes practical sessions in improvisation, individual projects around solo performance or group guided improvisations, presentations, recordings and listening sessions.

### **Recommended year of completion**

Bachelor's 2nd to 3rd year, Master's

**Level III**

## **S-MT29 SuperCollider (6 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- understand the architecture and signal flow in the language
- be able to create, modify, analyse and play networks of unit generators
- be able to build digital synthesisers
- have explored various control paradigms for performance purposes
- have studied the implementations of sound synthesis techniques
- have investigated live coding practices and other implementations of the language

### **Assessment**

On a scale of 0 to 5 or pass/fail

### **Prerequisites**

The unit requires previous experience with computer music and programming.

### **Completion and feedback**

Active class attendance (70%)

Professional conduct

Participation in group work

Completion of assignments by the deadline

Final presentation (30%)

Students are given oral feedback at the end of the course.

### **Coordinating teacher**

Alejandro Olarte

### **Tuition language**

English

### **Target group**

Music Technology students

Performance-oriented students

Composition-oriented students

Sound Art students

University of the Arts students

JOO students

Open University students

### **Unit overview**

The unit explores the syntax and possibilities of code base programming. SuperCollider is an open source object-oriented programming environment for real-time audio processing. It is one of the finest and most versatile environments for signal processing and especially for creating music applications of all kinds, such as complete compositions, interactive performances, installations, performance instruments and research tools for digital audio.

### **Teaching and learning methods**

The unit includes group workshops, practical sessions, individual projects, presentations, reading, listening and research on the technics and concepts.

### **Recommended year of completion**

Bachelor's 1st to 2nd year, Master's

**Level III**

## **S-MT30 Programming with Max (8 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the Max program
- be able to apply the principles and introduced techniques and strategies to their own artistic work

### **Assessment**

pass/fail

### **Prerequisites**

Some previous familiarity or experience with computer programming is preferred.

### **Completion and feedback**

Active class attendance (80%)

Assignments given by the teacher

Independent work

Final project

Students are given oral feedback.

### **Coordinating teacher**

Sami Klemola

Kalev Tiits

Josué Moreno

Alejandro Montes de Oca

### **Tuition language**

English

### **Target group**

The course is appropriate for students from all schools of the University of the Arts, and students from Aalto University with interest in this program.

### **Unit overview**

This course is an introduction to the Max program. The Max program can be used in electroacoustic or electronic composition, sound syntheses, real-time control of sound or video art, and other applications of music and visual or media art.

### **Teaching and learning methods**

Familiarity with study material

Extensive programming assignments.

Lectures, 70 h

**Recommended year of completion**

3rd year

**Level I**

**Keywords**

Algorithmic, generative, composer, installation, sound designer, signal processing

**S-MT56 Synthesisers (7–21 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- understand various synthesiser architectures
- be able to use those architectures as a component in his/her playing technique and musical expression
- be able to prepare repertoire for performance

The scope and technical level of the repertoire to be played depend on the credit score determined for the unit. The unit involves practical application of information on various synthesis and control technologies. Students are instructed in voice and ensemble programming and in general instrument management in programming and performance situations. The unit may also be completed using synthesisers not equipped with a keyboard.

**Assessment**

Examination board assessment on a scale of 0 to 5

**Prerequisites**

*Electroacoustic music 1*

**Completion and feedback**

Performance examination

Oral and written feedback

**Teaching and learning methods**

Individual tuition, maximum 24 h per academic year

Rehearsing repertoire

**Timing**

Tuition given every year

**Recommended year of completion**

No recommendation

**Target group**

No specific target group

**Coordinating teacher**

Kalev Tiits

**Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS).

**S-MT53 Performance with electronic instruments (4–6 cr)**

**Learning outcomes**

The purpose of the unit is for students to be able to deliver an artistically and technologically confident performance using the selected equipment, as a soloist and/or in an ensemble. The equipment may be hooked up to one or more acoustic instruments in the performance. Artistic

development of a personal repertoire may form part of the studies.

**Assessment**

Examination board assessment on a scale of 0 to 5

**Prerequisites**

*Electroacoustic music or Live Electronics Atelier*

**Completion and feedback**

Performance or recording

Oral feedback

**Coordinating teacher**

Alejandro Olarte

Kalev Tiits

**Tuition language**

English / Finnish

**Target group**

Music Technology students

Performance-oriented students

**Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS).

**Teaching and learning methods**

Individual tuition, maximum 24 h per academic year

Rehearsing repertoire

**Recommended year of completion**

Bachelor's 1st to 2nd year, Master's 1st to 2nd year

**Level II**

## **Module: MUSIC AND TECHNOLOGY: CREATIVE TOOLS, METHODS AND DEVELOPMENT**

### **S-MT33 Digital Signal Processing fundamentals (4 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- know how to analyse the frequency response of a simple filter and to design same
- be familiar with the signal processing methods used in recording studios, including their theoretical basis

**Assessment**

On a scale of 1 to 5

**Prerequisites**

Revision of upper secondary school mathematics included in the *Tools and techniques of music technology (S-MT58)* unit, or equivalent competence.

**Completion and feedback**

Written final examination followed by a feedback discussion

**Teaching and learning methods**

Small group tuition, maximum 39 h

Exercise group participation, 22 h

Assignments

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 1st year spring

**Target group**

Students whose main subject is Music Technology, and any other interested persons who have sufficient baseline mathematical skills. This unit may be offered through the Open University. Open University students may be given a skills test or background survey if required to ascertain their skill level.

**Coordinating teacher**

Kalev Tiits

**Unit overview**

The purpose of the unit is to explore the theory of digital signal processing through lectures and practical exercises. Students are introduced to the signals sampling theorem, the Fourier theorem, the convolution theorem and the combinatorics of basic signal processing operations.

**S-MT34 Digital Signal Processing application (4 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the programming language used in the unit and with the basics of computer science

**Assessment**

On a scale of 1 to 5

**Prerequisites**

*Digital Signal Processing, basics*

**Completion and feedback**

Programming exercise

Oral feedback either individually or in peer group discussion, at the teacher's discretion

**Teaching and learning methods**

Group tuition, maximum 39 h

Independent or group work on assignments

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 2nd year

**Target group**

Students whose main subject is Music Technology, and any other interested persons who have sufficient baseline mathematical skills. This unit may be offered through the Open University. Open University students may be given a skills test or background survey if required to ascertain their skill level.

**Coordinating teacher**

Kalev Tiits

**Unit overview**

The purpose of the unit is to apply the theory of digital signal processing to the programming of a musical sound processing algorithm.

## **S-MT31 Analogue Signal Processing fundamentals (3 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- know the basics of electrical safety and grounding from a sound engineer's perspective
- be able to estimate which maintenance tasks are possible and safe for himself/herself to perform
- be able to read flow charts and circuit diagrams and apply their content to circuit board design and component placement
- have a basic command of electronics so as to be able to perform simple assembly and maintenance tasks
- be familiar with the operating principles of the most common passive and active electronic components
- be familiar with the basics of audio frequency amplifiers and of passive and active filters

### **Assessment**

pass/fail

### **Completion and feedback**

Active class attendance

Completing the assignments given or taking a final examination

Oral feedback

### **Teaching and learning methods**

Group tuition, maximum 52 h

Exercises completed in a group or independently (under the teacher's supervision), and assignments given by the teacher, total 26 h

### **Timing**

Tuition given every other year

### **Recommended year of completion**

Bachelor's 1st year

### **Target group**

Students whose main subject is Music Technology, and any other interested persons who have sufficient baseline technology competence.

### **Coordinating teacher**

Kalev Tiits

### **Level I**

## **S-MT32 Analogue Signal Processing application (3 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- know how to build a simple electronic audio device and understand its operating principles
- be able to apply the skills acquired to music technology tools in general

### **Assessment**

pass/fail

### **Prerequisites**

*Analogue Signal Processing, basics*

### **Completion and feedback**

Completing the assignments given, or presenting an equivalent work specimen to the teacher

Oral feedback given by the teacher in connection with tuition

**Teaching and learning methods**

Small group tuition, maximum 52 h

Lectures, 4–7 h

Assignment to assemble an electronic device under the teacher's supervision

**Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 1st year spring

**Target group**

Students whose main subject is Music Technology, and any other interested persons who have sufficient baseline technology competence.

**Coordinating teacher**

Kalev Tiits

**Unit overview**

Students are expected to explore in more depth the topics covered in the previous unit (Analogue signal processing fundamentals), and to apply them in practice in a supervised assembly project the purpose of which is to build a pre-amplifier using semiconductor or vacuum tube technology, an equaliser, a compressor, or other simple audio device as approved by the teacher.

Experience gained in working with basic analogue technology components help students to understand the structure and function of tools used in creative work in other music technology units.

**Level II**

**S-MT35 Computer-assisted composition (8 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with various programming platforms that can be used as assistive means in composing
- have learned how to apply computer-assisted composition techniques in his/her artistic work

**Assessment**

On a scale of 0 to 5

**Completion and feedback**

Active class attendance

Completing assignments given

Unit project

Oral feedback given by the teacher

**Teaching and learning methods**

Lectures, maximum 35 h

Reading study materials, extensive coding assignments, coding exercises, total 45 h

Reading literature in the field

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 2nd year

**Target group**

Students whose main subject is Music Technology, composition students, applied programming



students, musicologists

**Coordinating teacher**

Josue Moreno

**Unit overview**

The unit is an introduction to software (e.g. OpenMusic, PWGL, Audiosculpt) and to concepts of computer-assisted composition and includes analysis of works created with various approaches to computer-assisted composition. Students are also required to create a composition using the techniques learned.

**Module: FILM AND GAME MUSIC**

**S-MT36 Lecture series on film music and film narration (6 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have knowledge of film narration and sound narration in film
- be familiar with the tradition of film music and its expressive potential

**Tuition language**

English

**Assessment**

pass/fail

**Completion and feedback**

Learning diary

Written feedback by the teacher; peer review

**Teaching and learning methods**

The unit is an introduction to film narration, sound narration and the tradition and current practice of film music through lectures, watching films and analysis. Lectures once per week for one academic year

Teaching hours 46 h per semester, total 92 h

Assignments given by the teacher, 60 h

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year

**Target group**

Students at the Sibelius Academy with any major subject. The unit is suitable for JOO students.

**Coordinating teacher**

Päivi Takala

**S-MT37 Film music: composition and production workshop (8–11 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the process of producing film music
- be able to write and produce demo music
- understand the importance of music to the overall narration of a film

- be familiar with the basics of film score recording in a studio with a symphony orchestra

### **Tuition language**

Finnish / English

### **Assessment**

pass/fail

### **Prerequisites**

*Lecture series on film music and film narration* either before or in parallel with this unit

Composition studies or practical and verifiable experience of composition

Command of a sequencer program

### **Completion and feedback**

Individual feedback from the teacher on assignments

Peer review

Basis for assessment:

- Active class attendance
- Completing composition and analysis assignments

### **Teaching and learning methods**

The unit is an introduction to the practices of writing and producing film music through lectures, watching films, analysis and practical exercises.

Tuition hours, 60 h

Assignments given by the teacher, 150 h

### **Timing**

Tuition given every year, autumn semester

### **Recommended year of completion**

Bachelor's 3rd year onwards

### **Target group**

### **Coordinating teacher**

Päivi Takala

## **S-MT38 Film director - sound designer – composer workshop (3 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- be able to work on the production team of a film, communicating on both artistic ideas and production practices with the rest of the team
- be able to produce demo music material on schedule and to receive feedback from the director and sound designer

### **Assessment**

pass/fail

### **Prerequisites**

*Lecture series on film music and film narration*

*Film music: composition and production workshop*

### **Completion and feedback**

Individual feedback from the teacher on assignments

Peer review

### **Teaching and learning methods**

The workshop explores the process of producing film music and sound design through exercises, discussions and examples.

Tuition hours, 50 h

Assignments given by the teacher, 35 h

**Timing**

Tuition given every year

**Recommended year of completion**

Master's 1st to 2nd year

**Target group**

**Coordinating teacher**

Päivi Takala

**S-MT40 Game music: theory and methods (8–12 cr)**

**Coordinating teacher**

Sandra Mahlamäki

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the work environments and production processes of game music and game sound design
- be able to write and produce game music
- be familiar with the terminology and history of the game industry
- have a command of the basics of dynamic, adaptive and generative music production

**Level II**

**Tuition language**

Finnish / English

**Unit overview**

The purpose of the unit is to introduce students to the key concepts, historical and theoretical basis and work environments of game music and game sound design. Students are introduced to IT from the perspective of a game sound technician or game musician.

Topics covered include sound design, content production and implementation in games, sound processing and version management in game projects, and the principal types of game sound applications.

**Assessment**

On a scale of 0 to 5

**Prerequisites**

*Recording and sound production 2* or equivalent skills

**Completion and feedback**

Active class attendance

Completing the assignments given

Completion requires constant attendance and the completing of all given assignments

The teacher gives feedback on assignments; peer review through group discussions

**Credit score**

8–12 cr

**Teaching and learning methods**

Group tuition, 60 + 60 h, total 120 h per semester

Independent or group work on assignments, 40 h

Assignments given by the teacher, 40 h

**Recommended year of completion**

3rd year

**Coordinating teacher**

Päivi Takala

### **S-MT39 Film music score recording and sound production workshop (3–8 cr)**

#### **Learning outcomes**

Students take this unit in the role of a composer, a recording engineer and sound producer, or a conductor.

A student who has completed the unit is expected to:

- understand the big picture and special characteristics of the recording of film music and film sound production: editing the score and parts for recording sessions, preparing for a recording session (possibly including visual synchronisation or a click track), managing a recording session, conducting film music, score post-processing, mixing
- understand the importance of teamwork in achieving a successful end result

#### **Assessment**

pass/fail

#### **Prerequisites**

Composers are required to have sufficient skills in writing score-based music. *Lecture series on film music and film narration* and *Film music: composition and production workshop* are also required.

Conductors are required to have sufficient skills for studio work.

Recording engineers and sound producer are required to have sufficient studies in audio technology and recording.

#### **Completion and feedback**

Completion requires constant attendance and the completing of all given assignments

Peer review through group discussions

#### **Teaching and learning methods**

Working with a maximum of 5 scores, each about 5 min. The scores may be film music or game music.

Work in a workshop setting

Independent work

Assignments

Individual tuition, 5–10 h

Group tuition, 30–50 h

Assignments given by the teacher, 30–140 h

#### **Timing**

Tuition given every other year

#### **Recommended year of completion**

Master's 1st to 2nd year

#### **Target group**

#### **Coordinating teacher**

Päivi Takala

### **S-MT41 Game music: composition and narration (6 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the history and genres of video games
- understand the types of game narration and the levels of game immersion

- be able to analyse and evaluate musical needs in games
- be able to write game music by applying his/her theoretical knowledge

### **Assessment**

On a scale of 0 to 5

### **Prerequisites**

*Recording and sound production 1* or equivalent basic skills in recording, sound production and music production

*S-Y3a Structural awareness of music 2: Applied analytical skills* or equivalent theory and harmony studies based on folk music or jazz

### **Completion and feedback**

Active class attendance

Completing the assignments given

Feedback given by the teacher on assignments, peer review

### **Teaching and learning methods**

Group tuition, maximum 60 h

Assignments given by the teacher, 100 h

### **Timing**

Tuition given every year

### **Recommended year of completion**

Bachelor's 2nd year onwards

### **Target group**

### **Coordinating teacher**

Päivi Takala

## **S-MT42 Game music: recording workshop (3–6 cr)**

### **Level III**

### **Tuition language**

Finnish / English

### **Unit overview**

Students take this unit in the role of a composer, a recording engineer or a sound producer. The purpose is to understand and execute the recording, orchestration, production and post-production of an orchestra-based and sample-based composition for adaptive media, i.e. games.

### **Timing and teaching methods**

Students are selected from among those who sign up in the autumn semester. Composers selected are to prepare one or more compositions for production independently. The compositions to be recorded are selected from among these. Composition length should be 2–8 min.

After the compositions are finished, working groups are selected, recording projects planned, and scores and orchestrations reviewed with experts.

Recording sessions are held at a suitable venue with a practice orchestra and conductors in the spring semester.

Sampled instruments, overdubbing and mixing are done in post-production by working groups.

### **Assessment**

pass/fail

### **Prerequisites**

Prerequisites for composers:

*Game music: theory and methods*

Applicable studies in music theory and composition

Prerequisites for sound engineers or sound producers:

*Recording classical music 1*

*Recording and sound production 1*

**Completion and feedback**

Students are to log the hours spent and are to participate in peer review in working groups and in group discussions.

Active class attendance and completing the assignments given

**Teaching and learning methods**

Group tuition, 52 h in the autumn and 52 h in the spring

Assignments completed in group work or independently, 60 h in the autumn and 60 h in the spring

**Recommended year of completion**

4th year

**Coordinating teacher**

Sandra Mahlamäki

**S-MT87 Game music: VR environment (3 cr)**

**Coordinating teacher**

Sandra Mahlamäki

**Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the work environments and production processes of Virtual Reality game design
- be able to write and produce game music for VR games

**Level III**

**Recommended year of completion**

4th year

**Tuition language**

Finnish / English

**Unit overview**

The purpose of the unit is for students to gain a command of the VR (Virtual Reality) game design environment and to be able to produce 3D music and 3D sound for VR platforms. The topics covered include 3D sound design, content production and implementation in VR games.

**Prerequisites**

*Game music: theory and methods* or equivalent skills

**Assessment**

On a scale of 0 to 5

**Teaching and learning methods**

Group tuition, 30 h

Independent or group work on assignments, 25 h

Assignments given by the teacher, 25 h

**Completion and feedback**

Active class attendance

Completing the assignments given

**Credit score**

3 cr

### **S-MT43 Game repertoire course (3 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the principal genres of video games and with the aesthetic and technical characteristics of the music typically used in them

#### **Assessment**

pass/fail

#### **Completion and feedback**

Active class attendance

Independent study of teaching materials

Feedback given by the teacher on assignments, peer review

#### **Teaching and learning methods**

Lectures

Independent study of teaching materials before the lectures

Tuition hours, 24 h

Assignments given by the teacher, 50 h

#### **Timing**

Tuition given every year

#### **Recommended year of completion**

Bachelor's 1st year

#### **Target group**

#### **Coordinating teacher**

Päivi Takala

#### **Unit overview**

The unit is an introduction to types of game music in various game genres and from various periods.

## **Module: PEDAGOGY OF MUSIC TECHNOLOGY**

### **S-MT44 Music technology pedagogy 1 (10 cr) (Finnish)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have a basic familiarity with pedagogy, the role of a teacher and the job description of a teacher
- have a command of the skills, knowledge and artistic capability required for teaching music technology at upper secondary schools, at music institutes or in adult education
- have a command of basic knowledge in music technology: safety, tools, etc.
- be able to produce and evaluate teaching material for his/her teaching
- have the competence to work as a teacher at lower-level music institutes
- have the capability to progress to *Music technology pedagogy 2*

#### **Prerequisites**

Applicable studies in the 100 cr Bachelor's degree, e.g. safety, acoustics, music technology tools studies, basic tools

### **S-MT45 Music technology teaching materials and literature (1 cr) (Finnish)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with teaching materials and literature in his/her field
- be able to use literature in preparing teaching materials

#### **Assessment**

pass/fail

#### **Completion and feedback**

Written assignments, oral discussions in the group, peer review

#### **Teaching and learning methods**

Lectures, 2 h

Completing written assignments

#### **Timing**

Tuition given every year

#### **Recommended year of completion**

Bachelor's 3rd year onwards

#### **Coordinating teacher**

Otto Romanowski

### **S-MT46 Command and pedagogical use of basic tools (2 cr) (Finnish)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the most commonly used notation and recording software packages
- be familiar with various operating systems and mobile platforms
- have the competence to teach the basics of applications and environments

#### **Assessment**

pass/fail

#### **Completion and feedback**

Written assignments, technical demonstration, oral review of outcomes in the group

#### **Teaching and learning methods**

Lectures, 4 h

Review of notation tools

Independent work

#### **Timing**

Tuition given every year

#### **Recommended year of completion**

Bachelor's 3rd year onwards

#### **Coordinating teacher**

Otto Romanowski

### **S-MT47 Producing teaching materials and introduction to teaching environments (2 cr) (Finnish)**

#### **Learning outcomes**

A student who has completed the unit is expected to:



- be familiar with production tools for teaching materials
- be familiar with tools and methods for distance learning
- be able to produce teaching materials for the practicum

#### **Assessment**

pass/fail

#### **Completion and feedback**

Technical demonstration, oral review of outcomes in the group

#### **Teaching and learning methods**

Lectures, 4 h

Review of media compilation tools

Review of distance learning tools and practical experiments

Independent work

#### **Timing**

Tuition given every year

#### **Recommended year of completion**

Bachelor's 3rd year onwards

#### **Target group**

#### **Coordinating teacher**

Otto Romanowski

### **S-MT48 Orientation practicum (teaching practice) (5 cr) (Finnish)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be able to design a teaching session on a limited topic in music technology
- be able to deliver teaching on the selected topic in a group session
- be able to justify the decisions he/she has made in teaching
- be able to communicate and to interact flexibly with learners
- have the capability to evaluate his/her own teaching and the teaching of others, and also the learning outcomes of learners
- be able to reflect in writing on his/her own teaching and the teaching of others

#### **Prerequisites**

*Introduction to pedagogy*

*Music technology teaching materials and literature*

*Command and pedagogical use of basic tools*

*Producing teaching materials and introduction to teaching environments*

#### **Assessment**

pass/fail

#### **Completion and feedback**

Written lesson plans, teaching demonstrations for the student's own group and for external groups

Peer review and oral feedback from the supervising teacher

#### **Teaching and learning methods**

Group tuition, 29 h

Preparing lesson plans

Giving practice lessons in the group and for external groups

Independent work

#### **Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year onwards

**Coordinating teacher**

Otto Romanowski

**S-MT49 Music technology pedagogy 2 (10 cr) (Finnish)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the skills, knowledge and artistic capability required for teaching music technology at a higher education music institution
- understand the artistic roles covered in teaching (composer, musician, producer)
- be able to use tools and methods associated with music education technology and its component areas
- be familiar with copyright law and contract law, have the social skills required for functioning in a variety of environments and situations, and be able to manage projects
- be able to design courses and training programmes in his/her subject and to prepare teaching materials for various learning environments (various media and platforms)
- be able to work independently as a teacher and to evaluate his/her own teaching critically
- have the capability of managing extensive projects jointly with other operators (functions, concerts, events, multimedia works)
- have the capability to place his/her teaching and activities in the context of other teaching and goals at the educational institution
- have the capability to progress to a teacher's pedagogical studies

**Prerequisites**

*Introduction to pedagogy*

*Music technology pedagogy 1*

**Teaching and learning methods**

Lectures and seminars

Designing teaching and producing materials

Observation of teaching of others

Small group work and portfolio compilation

Independent work

Teaching practice (practicum), 5 cr

**S-MT50 Design and delivery of music technology courses (5 cr) (Finnish)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be widely and diversely familiar with teaching materials and literature in his/her field
- have a command of multimedia production tools for creating teaching materials (e.g. website, videos and attachments)
- have a command of various teaching technologies (contact teaching, classroom teaching, studio teaching, distance learning, online learning)
- be able to apply his/her skills and knowledge in preparing teaching materials

**Assessment**

pass/fail

**Completion and feedback**

Materials in digital format. Peer review and oral feedback from the supervising teacher

**Teaching and learning methods**

Group tuition, 26 h

Review of literature and teaching materials

Planning extensive course programmes

Design, production and delivery of teaching materials for the student's teaching practice

Public presentation and evaluation of the student's teaching materials

Independent work

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year or Master's 1st year

**Target group**

**Coordinating teacher**

Otto Romanowski

**S-MT51 Orientation practicum 2 (5 cr) (Finnish)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be able to design a teaching session on a limited topic in music technology
- be able to deliver teaching on the selected topic in a group session
- be able to justify the decisions he/she has made in teaching
- be able to communicate and to interact flexibly with learners
- have the capability to evaluate his/her own teaching and the teaching of others, and also the learning outcomes of learners
- be able to reflect in writing on his/her own teaching and the teaching of others

**Assessment**

pass/fail

**Prerequisites**

*Music technology pedagogy 1*

**Completion and feedback**

**Teaching and learning methods**

Group tuition, 26 h

Teaching practice and observation of teaching

Small group work

Portfolio work

Independent work

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year, Master's 1st to 2nd year

**Target group**

**Coordinating teacher**

Otto Romanowski

## **Module: MAIN SUBJECT SUPPORTING STUDIES**

### **S-MT58 Tools and techniques of music technology (10 cr)**

**Basic-level unit, a prerequisite for the following units:**

*Recording and sound production 1*

*Basics of live sound*

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the basics of usage for the most common types of tools (microphones, mixing consoles, sound workstations) so that he/she can perform his/her tasks safely with a view to keeping the equipment in good working order according to their purpose
- be acquainted with IT from the perspective of a music technology professional

#### **Assessment**

pass/fail

#### **Completion and feedback**

Active class attendance

Completing the assignments given

Written feedback

#### **Teaching and learning methods**

Group tuition, maximum 120 h

Group work on assignments, 30 h

Independent work on assignments, 50 h

Assignments given by the teacher, 67 h

#### **Timing**

Tuition given every other year

#### **Recommended year of completion**

Bachelor's 1st year

#### **Target group**

New students whose main subject is Music Technology

#### **Level I**

#### **Tuition language**

Finnish / English

#### **Coordinating teacher**

Andrew Bentley

#### **Unit overview**

The purpose of this unit is to provide students with basic skills that are needed for other Music Technology units. Students are introduced to the operating principles of the most important tools used in music technology and instructed in how to use them in practice. Students are taught how to safely use the studios and equipment that they will need in their studies.

Completing this unit is a prerequisite for the following units:

*Recording and sound production 1*

*Basics of live sound*

## **S-MT72 Technical solfège (4 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- have the competence to perform tasks as an audio professional requiring analytical listening
- have improved his/her ability to understand and analyse various technical and aesthetic parameters in sound material and also his/her ability to identify faults
- is capable of employing the technological means at hand to edit sound material so as to approach the desired end result

### **Assessment**

pass/fail

### **Completion and feedback**

Active class attendance with exercises

Assignments and projects submitted for assessment

Final examination

### **Teaching and learning methods**

Small group tuition, maximum 30 h

Completing assignments

### **Timing**

Tuition given every other year

### **Recommended year of completion**

Bachelor's 2nd year onwards

### **Unit overview**

The unit involves examining sound materials from aesthetic, technical and physical points of view. With the skills acquired, students are capable of employing the technological means at hand to edit sound material so as to approach the desired end result.

## **S-MT71 Theoretical basis of music technology (3 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- have learned concepts of music theory that have emerged in the technological era
- be familiar with structures of music that may be approached with technology, understand them and be able to process them with software and hardware.

### **Assessment**

pass/fail

### **Completion and feedback**

Active class attendance

Completing assignments given

Oral feedback given by the teacher

### **Teaching and learning methods**

Group tuition, maximum 39 h

Independent work, 35 h

Review of materials

Reading assignments

Completing assignments given by the teacher

### **Timing**

Tuition given every other year

**Recommended year of completion**

Bachelor's 2nd year onwards

**Target group**

Students at the Sibelius Academy whose main subject is Music Technology, and anyone else interested in the subject. This unit is suitable for the offering of the Open Campus.

**Coordinating teacher**

Kalev Tiits

**Unit overview**

Selection from the following subject areas: processing of melody, harmony, rhythm, metre, timbre parameters and textures through numerical, mathematical and programming means; exploration of formal parameters of music emerging in the modern era, such as serialism, group theory, stochasticity, and concepts and methods arising from spectral analysis and formal grammars; analytical tools and methods; introduction to music cognition and the cognitive sciences; exploration of composition techniques and methods and score writing practices in the modern era.

**S-MT59 Music acoustics lecture series 1 (6 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- know the general basic concepts of acoustics
- understand the basics of instrument acoustics
- understand the basics of electronic acoustics
- know the basics of psychoacoustics
- know the basics of venue and studio acoustics

**Assessment**

pass/fail

**Coordinating teacher**

Miikka Huttunen

**Tuition language**

Finnish

**Completion and feedback**

Active class attendance (75%)

Homework

Final examination

**Teaching and learning methods**

Group tuition, 78 h

Homework, 82 h

**Recommended year of completion**

1st year

**Target group**

Students at the University of the Arts Helsinki, at Aalto University and at other universities

**Keywords**

Acoustics, psychoacoustics, instrument physics, studio design, concert hall, recording studio

### **S-MT88 Bachelor's proficiency demonstration workshop**

(support unit for the *Bachelor's proficiency demonstration*, for which the total score is 10 cr)  
(no credit award for this unit, which is included in the proficiency demonstration)

The purpose of the *Bachelor's proficiency demonstration workshop* is for the student to select and delimit the subject of his/her Bachelor's thesis and to practise writing academic text in order to prepare for writing the written portion of the proficiency demonstration. The student is given tuition by teachers and feedback from the student group. Each student in the workshop group writes on a separate subject, and the texts thus written are discussed in the group. Students are then to continue writing independently, and the next workshop discusses new texts. The unit encourages students to become more self-governing and has them discuss their thoughts with an opponent. The content of the unit is adapted to the needs of the students in each case.

Another teacher may supervise the production portion of the Bachelor's proficiency demonstration; this production may be a project that the student is working on or has already completed in another unit.

#### **Assessment**

pass/fail

#### **Completion and feedback**

Active class attendance

Returning assignments on schedule (including submitting the Bachelor's proficiency demonstration for inspection on schedule)

Oral and/or written feedback

#### **Teaching and learning methods**

Small group tuition, maximum 15 h

Independent work, reading and writing; acting as opponent to another student

#### **Tuition language**

Finnish / English

#### **Level –**

#### **Recommended year of completion**

Bachelor's 2nd and 3rd year

#### **Timing**

Tuition given every year

#### **Target group**

Bachelor's-level students whose main subject is Music Technology

#### **Coordinating teacher**

Päivi Takala

Marianne Decoster-Taivalkoski

### **S-MT61 Masters' seminar 1 (6–8 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be familiar with the opportunities, demands, learning techniques and study environment of master-level studies
- be familiar with various types of writing and their typical structures
- have evaluated the current level of his/her writing skills

- be familiar with the basics of project management
- have learned how to select and delimit a research topic
- know how to design a research plan
- have learned information searching methods and source criticism
- have acquired working methods and attitudes that foster mature studying

#### **Assessment**

Assessment by the teacher, pass/fail

#### **Completion and feedback**

Active class attendance

Assignments given by the teacher

Compulsory reading: Juha T Hakala: *Opinnäyte luovasti*; or Juha T Hakala: *Creative Thesis Writing*

Oral feedback given by the teacher in connection with tuition

#### **Teaching and learning methods**

Small group tuition, maximum 52 h

Individual tuition as needed

Independent work, particularly reading and analysis of text

#### **Timing**

Tuition given every year

#### **Recommended year of completion**

Master's 1st year

#### **Target group**

Master's-level students in Music Technology

#### **Coordinating teacher**

Kalev Tiits

### **S-MT62 Masters' seminar 2 (6–8 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have learned how to design and deliver a thesis or other proficiency demonstration through exploring the following topics:
  - o selection of a method suitable for the research topic and applying it in practice
  - o methods, practice and reporting consistent with academic work and a scientific approach, using systematic work habits
  - o processing and documenting of source materials
  - o peer review of thesis content and project reports, and giving and processing feedback
  - o writing content for the thesis

#### **Assessment**

pass/fail

#### **Completion and feedback**

Active class attendance

Completing assignments given

Oral feedback given by the teacher in connection with tuition

#### **Teaching and learning methods**

Small group tuition, maximum 52 h

Individual tuition as needed

Regular reporting on progress of the research or thesis and its documentation. The work includes



writing parts of the thesis content in an appropriate informative or academic style and presenting the resulting text to the group according to a schedule agreed with the teacher; also, peer review and discussions.

**Timing**

Tuition given every year

**Recommended year of completion**

Master's 2nd year

**Target group**

Master's-level students in Music Technology

**Coordinating teacher**

Kalev Tiits

**S-MT63 Introduction to the electronic music studio at the Music Centre (1 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have learned how to switch on the studio equipment
- know the purpose of the principal devices
- be able to make digital and analogue routings for basic functions
- have learned how the computers in the studio work and become sufficiently familiar with the software used to perform basic functions
- have learned about the working practices mandated at the studio, electrical safety and hearing protection

**Assessment**

The teacher assesses the student's participation and conducts an examination, pass/fail

**Completion and feedback**

Students may be granted user rights to the studio after completing *Electroacoustic music* in their preparatory studies. This introduction may also be completed in another way, as separately notified.

**Timing**

Tuition given every year

**Recommended year of completion**

Any time any student begins a unit that requires the use of the electronic music studio

**Target group**

Beginner users of the electronic music studio

**Coordinating teacher**

Alejandro Olarte

Andrew Bentley

**S-MT64 Introduction to the control rooms in the studio block at the Music Centre (1 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the signal paths and connections in the recording studios in the studio block
- know how to make simple multi-track recordings in recording studios and performance rooms

**Assessment**

pass/fail

**Teaching and learning methods**

Introduction to be arranged as separately announced

**Timing**

Tuition given every year

**Recommended year of completion**

**Target group**

**Coordinating teacher**

Miikka Huttunen

**S-MT65 Introduction to the minor control rooms at the Music Centre (1 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have a command of the signal paths and connections in the minor control rooms (Jazz, Folk Music, Music Education)
- be able to make simple multi-track recordings in the minor control rooms

**Assessment**

pass/fail

**Prerequisites**

Students must have completed studies in sound technology or studio technology, or practical experience of studio work. Students may be admitted to the introduction on the basis of a skills test. If a student fails the skills test, that student must complete the unit *Studio technology and sound production 1, secondary subject*, which also grants the student access rights to the minor control rooms.

**Completion and feedback**

**Teaching and learning methods**

**Timing**

Tuition given every year

**Recommended year of completion**

**Target group**

**Coordinating teacher**

Miikka Huttunen

**S-MT66 Introduction to Live Sound at the Music Centre (1 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have learned how to switch on amplification equipment and hook up microphones, DI boxes, stage monitor speakers, various accessories, etc.
- have learned the operating principles of venue PA systems
- be thoroughly familiar with a mixing desk and know its functions
- have learned about the working practices at venues (including wireless devices), electrical safety and hearing protection

**Assessment**

The teacher assesses the student's participation and conducts an examination, pass/fail

**Completion and feedback**

**Teaching and learning methods**

**Timing**

Tuition given every year

**Recommended year of completion**

No recommendation

**Target group**

**Coordinating teacher**

Kalev Tiits

**S-MT13 IPSAT – Introduction to Principles of Spatial Audio Technology (2 cr per semester)**

**Advanced studies unit**

**Learning outcomes:**

A student who has completed the unit is expected to:

- have an understanding of spatial hearing and multimodal perception
- have an understanding of the principles of spatial audio technologies
- have an understanding of their implication on musical practices
- have experience of psychophysical experiments
- know how to integrate these insights into their artistic work

**Assessment**

pass/fail

**Prerequisites**

An understanding of basic physics is an advantage.

**Completion and feedback**

The students' individual contributions and engagement with the subject are commented on and suggestions for further study on the subject given.

**Teaching and learning methods**

The sessions consist of 2 x 45 min theory followed by 1 x 45 min experiments, or sometimes experiments first and theory/discussion after.

**Timing**

Tuition given every other year

**Recommended year of completion**

Master's 1st to 2nd year

**Target group**

Students whose main subject is Music Technology

Composition-oriented students

Sound artists

JOO students

**Coordinating teacher**

Dom Schlienger

**Unit overview**

Block I Sound Perception (sessions 1–5)

- perception (based on Alain Berthoz)
- basics of psychophysical experiments
- psychoacoustic metering
- spatial hearing (Sound source localisation, Blauert, Moore)
- spatial acoustics (Blessr, Salter)

Block II Sound Reproduction (sessions 6–10)

- From Mono to stereo
- Binaural (HRTF)
- Vector based Amplitude Panning
- Ambisonics
- Wave Front Synthesis

#### Block III Implications on Practice (11–12/15)

- Spatial paradigms
- Cultural context
- History

### **S-MT14 Experimental recording techniques (2 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have experimented with materials and equipment to find creative solutions for audio recordings
- develop their own set of techniques to create and manipulate sounds during the recording process
- have improved their analytic and qualitative judgment skills through comparative listening
- be familiar with methods of experimental research

#### **Assessment**

On a scale of 0 to 5 / pass/fail

#### **Prerequisites**

*Tools and techniques of music technology* or equivalent skills

#### **Completion and feedback**

Students are given oral feedback at the end of the unit.

Unit assessment is weighted: attendance 80% and final presentation 20%.

#### **Coordinating teacher**

Miikka Huttunen

Marianne Decoster-Taivalkoski

Andrew Bentley

Alejandro Olarte

#### **Tuition language**

English

#### **Target group**

Music Technology students

Sound Art students

Sound Design students

#### **Unit overview**

In this workshop participants, will explore, experiment and analyse alternative approaches to sound recording technics. Students will develop through qualitative judgments the experimental attitude to create and manipulate sound qualities during the recording process.

The unit is intended to bridge artistic and engineering practices by extending the scope of recording techniques available at the studios while simultaneously adopting a research attitude towards the discipline of audio recording.

#### Contents

The workshop is a hands-on workshop where many materials and a variety of equipment will be available for experimentation opening up a research attitude and developing original ideas. Some suggestions to start with:

- loudspeakers as microphones
- moving microphones
- hydrophones
- direct electric signal recording
- springs, metal sheets and resonators
- close ups and over amplification
- recording the human body
- carbon, graphite and other chemicals
- film technics for audio tape
- field recording

#### **Teaching and learning methods**

Workshop sessions, reading, listening sessions.

Preparing and executing experiments.

Individual work and research.

#### **Recommended year of completion**

Bachelor's 1st to 2nd year, Master's

#### **Level**

Preparatory / beginner

## **Module: GENERAL STUDIES**

### **S-MT80 Workshop (1–3 cr per completion)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- be conversant with a specialist topic as presented by an expert
- have a deeper understanding of research or certain professional activities, etc.
- have improved his/her capabilities for communication and analysis

#### **Recommended year of completion**

From the 2nd year

#### **Assessment**

pass/fail

Assessment by the teacher or by the host teacher

#### **Completion and feedback**

##### Learning outcomes 'a' and 'b':

Active class attendance

Possibly completing course assignments

Possibly reporting

##### Learning outcome 'c':

Asking the lecturer questions

Participating in discussions

Oral feedback

**Teaching and learning methods**

Customised, in some cases unique, lectures and/or small group tuition

Classroom exercises

Debriefing or demonstration

Individual or group work

Reading background material, taking notes

**Timing**

Tuition given every year

**Recommended year of completion**

No recommendation

**Target group****Coordinating teacher**

To be appointed by the head of the department as required

**Unit overview**

Students may complete a workshop multiple times.

**S-MT76 Specialisation studies 1 (1–12 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- have improved his/her in-depth knowledge of a particular area of music technology through the periodically changing offering of units in the subject

The focus is on current work methods and professional practices in the field.

**Assessment**

pass/fail, with a statement from the instructor

**Prerequisites**

At least 8 cr in the following units:

*Recording and sound production 1, Preparatory course in electroacoustic music, Media and sonic arts 1, Tools and techniques of music technology* (all completed)

and at least 8 cr in the following units:

*Recording and sound production 2, Electroacoustic workshops, Acousmatic music composition and theory, Media and sonic arts 2* (may be completed in parallel)

or equivalent skills, at the discretion of the coordinating teacher.

**Completion and feedback**

Active class attendance

Subject-specific assignments

Oral feedback

**Teaching and learning methods**

Individual tuition, maximum 2 h per 1 cr, 2–24 h

Group sessions, maximum 32–80 h

Practical work experience, exercises, reporting

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year

**Target group****Coordinating teacher**

To be appointed by the head of the department as required

**Unit overview**

The content and work methods in the unit are variable.

**S-MT79 Specialisation studies 2 (1–60 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- have improved his/her in-depth knowledge of a particular area of music technology through the periodically changing offering of units in the subject

The focus is on current work methods and professional practices in the field.

**Assessment**

pass/fail

**Prerequisites**

*Specialisation studies 1*

**Completion and feedback**

Active class attendance

Subject-specific assignments

Statement given by the instructor

**Teaching and learning methods**

Individual tuition, maximum 2 h per 1 cr, maximum 30 h per academic year

Practical work experience, exercises, reporting

**Timing**

Tuition given every year

**Recommended year of completion**

Master's 1st to 2nd year

**Target group****Coordinating teacher**

To be appointed by the head of the department as required

**Unit overview**

The content and work methods in the unit are variable.

**S-MT54 Music performance studies (5–25 cr)****Learning outcomes**

A student who has completed the unit is expected to:

- have acquired basic competence on a musical instrument
- have reviewed various musical styles and repertoire associated with them
- understand the basic techniques on the instrument from the perspective of a music technology professional

**Assessment**

The teacher assesses the unit as pass/fail or on a scale of 0 to 5 (as agreed with the teacher).

**Completion and feedback**

Active class attendance

Performance examination or performance demonstration

In case of a performance examination, it must comply with the current level performance examination requirements for the instrument in question.

**Teaching and learning methods**

The student and instrument teacher draw up a plan at the start of the unit describing the repertoire to be reviewed and how the unit is to be completed. Approval for the plan must be sought from the head of the student's department. Teaching in the unit must progress as per the plan approved by the head of the department. The granting of study rights is at the discretion of the head of the department which is responsible for tuition in the instrument in question. This unit may include completions on multiple instruments.

Individual tuition, maximum 20 or 24 h, depending on the scope of the unit as agreed

Rehearsing repertoire

#### **Timing**

Tuition given every year

#### **Recommended year of completion**

No recommendation

#### **Target group**

Students whose main subject is Music Technology

#### **Tuition language**

Finnish / English

#### **Level I–V**

#### **Coordinating teacher**

The study planning working group will arrange for a suitable teacher according to the student's needs.

#### **Unit overview**

Students may take this unit for a maximum of 5 cr each in four academic years or for a maximum of 7 cr each in three academic years.

Tuition may be granted for one additional academic year if it is related to the student's specialisation studies.

The scope and technical level of the repertoire to be played depend on the credit score determined for the unit. The head of the department must approve the scope of the unit in the student's individual study plan.

### **S-MT57 Composition (7–21 cr)**

#### **Learning outcomes**

A student who has completed the unit is expected to:

- have learned the basics of composition technique in a variety of genres
- have experience of composing music
- be conversant with taking the demands of the performing ensemble and the music into account

#### **Assessment**

Examination board assessment on a scale of 0 to 5

#### **Prerequisites**

Music theory studies (minimum 5 cr)

#### **Completion and feedback**

Active class attendance

Completing the assignments given

Submitting the agreed composition portfolio for assessment

Oral feedback

#### **Teaching and learning methods**



Individual tuition, maximum 24 h per academic year (maximum 4 h per 1 cr)

Completing the assignments given

Keeping a composition portfolio

**Timing**

Tuition given every year

**Recommended year of completion**

No recommendation

**Target group**

Students in Music Technology, students in music performance, other students of the Sibelius Academy interested in composition

**Timing**

Finnish / English

**Level –**

**Coordinating teacher**

To be appointed by the head of the department as required

**Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS). The unit may be completed in several parts.

**S-MT77 Research exercise (5 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- have evolved a research approach to his/her work
- be conversant with academic writing in a technical/scientific or arts research subject

**Assessment**

pass/fail

**Completion and feedback**

Active class attendance

Completing the exercise

Written report

Oral feedback

**Teaching and learning methods**

Individual or small group tuition, 7 h

Independent work, 127 h, of which reporting about 40 h

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year

**Target group**

**Coordinating teacher**

Kalev Tiits

**S-MT81 Portfolio (3–10 cr)**

**Learning outcomes**

A student who has completed the unit is expected to:

- be able to present the work he/she has done in the course of his/her studies in a representative portfolio
- be able to give an oral presentation of his/her portfolio

### **Assessment**

Assessment by the teacher on a scale of 0 to 5, based on the student's active attendance and the contents of the portfolio

### **Completion and feedback**

Students are required to document their studies and artistic work by compiling and maintaining a portfolio

Oral and/or written feedback

### **Teaching and learning methods**

Portfolio design with the supervisor, 2 h

Compiling the portfolio independently

Presenting the portfolio to the supervisor on a regular basis (minimum twice per year)

### **Timing**

Tuition given every year

### **Recommended year of completion**

No recommendation

### **Target group**

Students whose main subject is Music Technology

### **Coordinating teacher**

To be appointed by the head of the department according to the student's needs

## **S-MT74 Project (1–20 cr)**

Music Technology no more has a proprietary description for project studies, but currently the unit description in the Faculty's common studies is applied: *S-Y28 Project* (1–20 cr, 27–534 h). In Music Technology, projects may be artistically oriented, knowledge-based or skill-based, they may also be literature reviews, in which case students are required to take examinations or write essays. Literature projects typically are narrow in scope. When starting projects in recording, production and other projects that call for studio time, the plan required from the student should be a detailed one, including an estimate and a breakdown of studio time needed. Projects are always to be supervised by a teacher.

## **S-Y28 Project**

### **Learning outcomes**

Learning outcomes are to be agreed with the coordinating teacher on a case-by-case basis.

### **Assessment**

pass/fail

### **Prerequisites**

There are no prerequisites for this unit.

### **Completion and feedback**

The student is required to draw up a written project plan for exploring a selected specialist area, for approval by the head of the department. The plan must include:

- project goals and timetable
  - proposed amount of work to be completed by the student and its stages (27 h = 1 cr)
  - request for preferred coordinating teacher, if the student has one; for projects of more than 10 cr, a request for coaching sessions may be included.
- Writing a report on the project
  - Written feedback is given by the coordinating teacher.

**Teaching and learning methods**

Delivering the project as designed in the project plan  
Individual coaching, maximum 5 h

**Timing**

Tuition given as required

**Coordinating teacher**

Coordinating teacher assigned by the head of the department

**Recommended year of completion**

Master's 1st to 2nd year

**S-MT78 Production exercise (1–20 cr per completion)****Learning outcomes**

A student who has completed the unit is expected to:

- have improved his/her professional competence
- be able to work independently or as a member of a working group
- have improved his/her capability for designing, delivering and documenting projects

**Assessment**

pass/fail

**Prerequisites**

The teacher evaluates the student's capacity for executing his/her plan

**Completion and feedback**

Learning outcomes 'a' and 'b':

Participating in the production exercise

Learning outcome 'c':

Report

Statement given by the instructor

**Teaching and learning methods**

Students are required to design the production exercise in writing, through discussions on goals and working methods with the supervisor and the instructor. Having taken part actively in the exercise, students are required to document and report on the project as agreed. If the production exercise is connected to MuteFest, students are required to attend MuteFest production meetings.

**Timing**

Tuition given every year

**Recommended year of completion**

Bachelor's 3rd year, Master's 1st to 2nd year, or Bachelor's 2nd year at MuteFest

**Target group****Coordinating teacher**

To be appointed by the head of the department as required

**Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS).

The student may complete multiple production exercises. A production exercise may be included in MuteFest, involving the design and delivery of an individual event at the festival or a part thereof, whether independently or as a member of a working group, under teacher supervision.

## **S-MToK Proficiency demonstration, music technology (Bachelor of Music) (10 cr)**

The proficiency demonstration consists of two units:

*S-MT68 Project (Bachelor of Music)*

*Maturity essay*

### **Assessment**

Overall assessment of the proficiency demonstration as pass/fail.

Completion is awarded by the head of department.

## **S-MT68 Project (Bachelor of Music) (10 cr)**

With a proficiency demonstration, the student shows that he/she has acquired the capabilities required in the learning outcomes specified for his/her main subject and is able to apply his/her learning creatively and to further improve his/her skills.

### **Learning outcomes**

A student who has completed the unit is expected to:

- have learned how to apply the things learned in his/her main subject studies to his/her independent work
- know how to place his/her work in a broader context and how to evaluate his/her own work and that of his/her colleagues constructively
- be able to build and reflect on his/her artistic discourse and to present his/her work in linguistically faultless form
- have learned time management in independent work

### **Assessment**

On a scale of 0 to 5, based on statements from two or three inspectors

### **Prerequisites**

At least 60 cr of studies in the student's main subject

### **Completion and feedback**

Project design, delivery and reporting as approved by the supervisor

Assessment by an examination board with 2 or 3 members, appointed by the head of the department, on a scale of 0 to 5

The examination board submits its statement to the student, the head of the department and the supervisor.

Completion is awarded by the head of department.

### **Teaching and learning methods**

Individual tuition or coaching, 10 h / Group tuition (Bachelor's thesis workshop sessions), 32 h

Independent work, 228 h

The student is required to select a small-scale project or topic related to technology, artistic performance or information searching and then to design the work stages and timetable, deliver the project in practice and report on it in writing.

### **Timing**

Tuition given every year

### **Recommended year of completion**

Bachelor's 2nd to 3rd year

### **Target group**

Students at the Sibelius Academy whose main subject is Music Technology

### **Coordinating teacher**

Supervisor appointed by the head of the department

## **S-MToM Proficiency demonstration, music technology (Master of Music) (20–40 cr)**

With a proficiency demonstration, the student shows that he/she has acquired the capabilities required in the learning outcomes specified for his/her main subject and is able to apply his/her learning creatively and to further improve his/her skills. The student also has the capability to progress to further studies.

The proficiency demonstration consists of two units:

*S-MT69 Master's thesis; or*

*S-MT70 Master's thesis major project; and*

*Maturity essay*

### **Assessment**

Overall assessment of the proficiency demonstration as pass/fail. Completion is awarded by the head of department.

## **S-MT69 Master's thesis (20 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- be able to handle a broad topic in the field of music technology and to approach his/her topic from a research angle
- be able to apply the scientific method to the topic of his/her choice

### **Assessment**

On a scale of 0 to 5

### **Prerequisites**

The student must have begun *Master's thesis seminar 1* before beginning the thesis, and must complete *Master's thesis seminar 2* while writing the bulk of the thesis.

### **Completion and feedback**

The student must write a Master's thesis that demonstrates control of the subject area, is written in a clear and logical way and shows that the student has the capability to progress to postgraduate studies. The Master's thesis is to be submitted to the study administration in four (4) bound copies. A separate summary must be written, detailing the research question, materials, research methods and principal results. An extra copy of the summary must be submitted.

Evaluators (2–3) appointed by the head of the department assess the thesis and return a written statement on it to the student, the head of the department and the supervisor. Completion is awarded by the head of department.

### **Teaching and learning methods**

Individual tuition / coaching, 20 h or as allocated by the head of the department

Independent work, 528 h

### **Timing**

Tuition given every year

### **Recommended year of completion**

Master's 2nd year + 1 semester

### **Target group**

Students at the Sibelius Academy whose main subject is Music Technology

### **Coordinating teacher**

Kalev Tiits

Päivi Takala

## **S-MT70 Master's thesis major project (20–40 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- know how to delimit and design a major project, including its pre-production, budgeting, production and evaluation, and also how to frame an artistic problem if the purpose of the project is to resolve an artistic problem
- be able to distribute project tasks in a feasible way, place them on a timeline and work as a team member in case of a group production
- be able to describe his/her creative processes
- be able to describe, explain and justify his/her work to experts in the same field, to experts in other fields and to the public at large
- be able to describe the identity, strengths and development points of his/her artistic, scholarly or academic identity
- understand the connections between areas of expertise in music and technology

The project demonstrates the student's control of the process of creative work and his/her originality and innovation, and the report describes the contribution made by the project to the relevant field and to the community. The written portion of the project must present the results and analysis of them and evaluate them vis-à-vis the project goals. Artistic merit and reflection are important.

### **Assessment**

On a scale of 0 to 5, based on statements from two or three evaluators

### **Completion and feedback**

Design and delivery of a project

The project topic is to be decided and the plan for the resources needed and the timetable drawn up at the *Master's thesis seminar*. These must be agreed in writing between the student, the supervisor and the head of the department.

Research paper

The research paper and project materials are to be submitted for inspection in four (4) bound copies with appendices. A separate summary must be written, detailing the project concept and research question, the topic, the production methods and the principal results. An extra copy of the summary must be submitted. Inspectors appointed by the head of the department (2–3) evaluate the project and report and return a written statement on it to the student, the head of the department and the supervisor. Completion is awarded by the head of department.

### **Teaching and learning methods**

Individual tuition / coaching, 12-24 h, depending on the scope of the project or as allocated by the head of the department

Students are required to take *Master's thesis seminar 1–2* at the same time

Independent work, 528–1056 h

### **Timing**

Tuition given every year

### **Recommended year of completion**

Master's 2nd year + 1 semester

### **Target group**

Students at the Sibelius Academy whose main subject is Music Technology

### **Coordinating teacher**

Kalev Tiits

Päivi Takala

## **S-MT55 Musical assistantship (7–21 cr)**

### **Learning outcomes**

A student who has completed the unit is expected to:

- be able to work as a team member on a music or research project
- understand his/her duties thoroughly and design and deliver his/her contribution independently and reliably
- be able to keep up with work in the project group in technical, artistic and social terms
- be able to practise his/her skills in diverse ways

### **Assessment**

The teacher and one colleague assess the unit on a scale of 0 to 5.

### **Completion and feedback**

Completing assignments on schedule

Oral and written feedback

### **Teaching and learning methods**

The unit may include working as a composer's assistant on an electroacoustic composition project in a studio, designing and configuring digital and analogue devices for live electronics performances, or troubleshooting technology-based improvisation problems as a technical and artistic assistant.

Individual tuition, maximum 4 h per 1 cr, 7–84 h

Independent work on projects, 103–477 h

### **Timing**

Tuition given every year or as possible

### **Recommended year of completion**

No recommendation

### **Timing**

Finnish / English

Level –

### **Target group**

Self-governing Music Technology students

### **Coordinating teacher**

To be appointed by the head of the department as required

### **Unit overview**

The scope of this unit is to be determined in the student's individual study plan (HOPS). The unit may be completed in several parts.