

MU 2220 SOUND DESIGN AND SONIC ART

(Formerly Music Technology II)

(Updated Fall 2010)

LEVEL 5

CREDITS:15

PREREQUISITES:

CS 1070 Introduction to Information Systems

MU 2119 Making Music with Computers

or by Instructor's Permission

CATALOG

DESCRIPTION:

An exploration of the creative use of computers in the fields of sound design and sonic art, as practiced in sound design for film, sound installations, electroacoustic composition and soundscape composition. The course combines extensive practical work with supporting theoretical studies, and introduces students to MaxMSP-like computer programming systems used by creative artists for sound design.

Does not satisfy the humanities requirement.

RATIONALE:

This module extends the key basic skills students established in the precursor module (MU 2019 Making Music with Computers). It allows students to practice and develop their technical and creative skills while at the same time deepening their understanding of the underlying creative and technical theories in the field.

LEARNING

OUTCOMES:

After successfully completing this module students should be able to demonstrate:

1. their familiarity with the creative and technical issues behind different forms of sound design and sonic art.
2. advanced skills in the use of computer-based systems for the creation, manipulation and transformation of sound for creative ends.
3. a basic understanding of a MaxMSP-like creative programming system, together with key skills in making use of such a system for creative sound work.
4. the ability to engage with compositional ideas and work creatively to compose short pieces of sonic art with coherent creative structures.
5. realize their own creative project that makes integrated and sophisticated use of a wide range of computer-based sound technology.

**METHOD OF
TEACHING AND
LEARNING:**

In congruence with the learning and teaching strategy of the college, the following tools are used:

- Class lectures (including class discussions and group work)
- Practical work in a suitable computer lab using the range of software identified for the course
- Listening, reading and practical exercises assigned as homework which are then reviewed in class
- Office hours: students are encouraged to make full use of the office

hours of their instructor, where they can ask questions, see their assigned work results and/or go over lecture material

- Use of a blackboard site, where instructors post lecture notes, assignment instructions, announcements and additional resources
- Peer tutoring is also available to students who choose to get additional help

ASSESSMENT:

| Assessment | Type | Final Course Marks | Learning Outcomes Assessed |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------|----------------------------|
| Midterm Practical Project <i>Collection of practical exercises according to tutor supplied requirements, submitted on a CDROM, with accompanying written notes (300 words).</i> | Summative | 30% | 1 & 2 |
| Final Practical Project <i>Practical creative computer music project submitted on CDROM, with accompanying written notes (1,000 words).</i> | Summative | 70% | 1, 2, 3, 4 & 5 |

READING LIST:

Chadabe, J. (1997): *Electric Sound: The Past and Promise of Electronic Music*, Prentice Hall, New Jersey.

Manuals for the software being used, which are freely available online in Adobe Acrobat (pdf) format from the software company's web sites.

COMMUNICATION REQUIREMENTS:

Full participation in lecture and practical sessions together with the presentation of projects using a high standard of written English.

SOFTWARE REQUIREMENTS:

This course is dependent upon the extensive use of specialized computer music software in a suitable computer lab.

It is important that students can have access to similar software on their home machines, to allow them to practice and work on assignments away from the lab. In order to support this, the course will make extensive use of freeware and shareware software.

Given the rapidly changing nature of computer software, the following table of software used on the course should only be regarded as current at the time of writing (December 2010). The module tutor will make available an updated list of the software to be employed (including version numbers when appropriate) before module delivery begins each time.

| Software Name | Company Author | Web Site | License |
|---------------|----------------|-------------------|------------|
| <i>Cubase</i> | Steinberg | www.steinberg.net | commercial |

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|----------------------------------|----------------|------------------------|------------|
| <i>Sibelius</i> | Avid | www.avid.com | commercial |
| <i>Reaper</i> | Cookos | www.reaper.fm | shareware |
| <i>MaxMSP Runtime</i> | Cycling74 | www.cycling74.com | freeware |
| <i>Cecilia</i> | Jean Piche | www.jeanpiche.com | freeware |
| <i>Pure Data (pD)</i> | Miller Puckett | www.puredata.info | freeware |
| <i>Soundmagic Spectral Tools</i> | Michael Norris | www.michaelnorris.info | freeware |
| <i>Csound</i> | Barry Vercoe | www.cosunds.com | freeware |

WWW RESOURCES: There are extensive online resources for music technology. The typical starting points for this course will be:

1. the web pages of the software companies involved, almost all of whom have online tutorials, information resources and background articles.
2. selected tutorial articles from online magazines concerned with the field, starting with *Sound On Sound* at www.sospubs.com and *Audio Media* at www.audiomedia.com.

INDICATIVE CONTENT:

1. Creative Background

the emergence of musique concrète and electronic music
the music and ideas of the GRM school
the music and ideas of Stockhausen

2. Tools and Techniques

'classical' sound transformation techniques
FFT-based spectral sound transformation techniques
fundamentals of computer programming for audio manipulation using MaxMSP and pD-like languages
theory and practice of 'classical' sound synthesis
granular synthesis and granulation

3. Creative Issues

aesthetic issues in sonic art – electroacoustic music composition
glitch and noise-based musics
circuit bending and hacking as approaches to creative sound generation