

**DEREE COLLEGE SYLLABUS FOR:
MU 3219 MUSIC TECHNOLOGY II - CREATIVITY & INNOVATION**

3/0/3

**UK LEVEL:5
UK CREDITS:15**

(Formerly: MU 3119 MAKING MUSIC WITH COMPUTERS)
(Revised Fall 2022)

<p>PREREQUISITES:</p>	<p>CS 1070 INTRODUCTION TO INFORMATION SYSTEMS or ITC 1070 INFORMATION TECHNOLOGY FUNDAMENTALS MU 2177 MUSIC TECHNOLOGY I - FUNDAMENTALS</p>
<p>CATALOG DESCRIPTION:</p>	<p>The course explores new and innovative approaches to music technology that have been developed to meet evolving creative musical needs and changing technical developments. Students will make use of musical programming environments to practically investigate musical creativity and how this relates to underlying technical systems.</p>
<p>RATIONALE:</p>	<p>The technology side of music technology is constantly evolving and becoming faster, more accessible and musically powerful. At this point in the program students have fundamental music technology skills and are ready to investigate such developments and evaluate them from a musical point of view. Bringing in a musical programming environment gives them access to a wide range of current technical developments and prepares them to make effective and up-to-date use of technical resources in the remainder of the program.</p>
<p>LEARNING OUTCOMES:</p>	<p>After successfully completing this course, students should be able to:</p> <ol style="list-style-type: none"> 1. Evaluate a range of new and innovative approaches to music via technology, explaining the musical context and creative issues in each case. 2. Demonstrate fundamental musical and technical concepts via collaborative programming exercises in a musical programming environment. 3. Make use of a musical programming environment to implement well-established and more innovative music technology techniques. 4. Build projects within a musical programming environment to investigate innovative music technology approaches within a creative context.
<p>METHOD OF TEACHING AND LEARNING:</p>	<p>In congruence with the teaching and learning strategy of the college, the following tools are used:</p> <ul style="list-style-type: none"> • lecture and seminar sessions exploring musical and technical concepts and principles; • structured practical work in a music technology facility; • extensive private study using freely available software on a student's own computer; • peer feedback workshops; • use of a learning management system (Blackboard) where instructors post lecture notes, assignment instructions, announcements and additional resources; • students are encouraged to make full use of their instructor's office hours, where they can ask questions, see their assigned work results and/or go over lecture material; • support from the Student Academic Support Services (SASS), who offer one-to-one and group workshop sessions to support the development of academic and study skills.

ASSESSMENT:	<table border="1"> <tr> <td colspan="2" data-bbox="521 134 1295 163">Summative:</td> </tr> <tr> <td data-bbox="521 163 1295 310"> First assessment: <ul style="list-style-type: none"> Musical programming exercises, solving typical musical issues as provided in a range of different ways. Critical evaluation of the issues and response in the form of a video walk-through of the programming exercises. </td> <td data-bbox="1295 163 1372 310" style="text-align: center;">30%</td> </tr> <tr> <td data-bbox="521 310 1295 489"> Final assessment: <ul style="list-style-type: none"> Complete musical project that addresses a musical situation (composition, performance, improvisation etc.) using an original assembly of tools, techniques and programming activity. Critical reflection in the form of a critical reflection video discussion of excerpts from the project. </td> <td data-bbox="1295 310 1372 489" style="text-align: center;">70%</td> </tr> <tr> <td colspan="2" data-bbox="521 489 1295 518">Formative:</td> </tr> <tr> <td data-bbox="521 518 1295 548">Project Exercises</td> <td data-bbox="1295 518 1372 548" style="text-align: center;">0</td> </tr> </table> <p>The formative assessments prepare students for both summative assessments. Learning Outcomes 1 & 2 are assessed in the first assessment. Learning Outcomes 1, 3 & 4 are assessed in the final assessment.</p> <p><i>Students are required to resit failed assessments in this course.</i></p>	Summative:		First assessment: <ul style="list-style-type: none"> Musical programming exercises, solving typical musical issues as provided in a range of different ways. Critical evaluation of the issues and response in the form of a video walk-through of the programming exercises. 	30%	Final assessment: <ul style="list-style-type: none"> Complete musical project that addresses a musical situation (composition, performance, improvisation etc.) using an original assembly of tools, techniques and programming activity. Critical reflection in the form of a critical reflection video discussion of excerpts from the project. 	70%	Formative:		Project Exercises	0
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INDICATIVE READING:	REQUIRED READING: Cipriani, Alessandro & Giri, Maurizio, <i>Electronic Music and Sound Design: Theory and Practice with Max and MSP</i> , Contemponet, 2019.										
INDICATIVE MATERIAL: <i>(e.g. audiovisual, digital material, etc.)</i>	REQUIRED MATERIAL: Students will be directed to musical programming examples as found on the forum areas of the MaxMSP site as well as online repositories such as GitHub etc.										
COMMUNICATION REQUIREMENTS:	Students will be expected to make use of a learning management system (Blackboard) and have an active ACG email account. All written work should follow current MLA standards for formatting, style and citation.										
SOFTWARE REQUIREMENTS:	<p>The course will make use of a very wide range of different software packages, the specific details of which will be confirmed to registered students well before the course commences. This allows software needs to be adjusted to be fully up to date at the time of delivery. The aim will be to use free or shareware software wherever possible. Some use might be made of commercial software running in time-limited 'demo' modes.</p> <p>As an indicative guide, at the time of writing the following software packages form the core support to the course:</p> <ul style="list-style-type: none"> Reaper (www.reaper.fm) MaxMSP (www.cycling74.com) PureData (www.puredata.org) VCV Rack (www.vcvrack.com) 										
WWW RESOURCES:	<p>There are extensive online resources for music technology. The course will make use of the support resources available for all of the core software packages in use. Further details can be found at the support pages of each package:</p> <ul style="list-style-type: none"> Audacity (www.audacityteam.org) Reaper (www.reaper.fm) MuseScore (www.musescore.org) MaxMSP (www.cycling74.com) PureData (www.puredata.org) VCV Rack (www.vcvrack.com) <p>The course will also make use of user-generated demonstrations, programming examples and musical performances that are widely available on YouTube as well as music technology manufacturer web sites.</p>										

INDICATIVE CONTENT:	<p>Programming for MIDI</p> <ul style="list-style-type: none">• Data structures within MIDI• Simple capture and musical manipulation of MIDI data• Shaping and mapping of MIDI data for use as control messages• MIDI as communication between user interfaces and software parameters• MIDI and randomness – algorithmic techniques for bringing variety and interest to musical data as well as algorithmic composition <p>Programming for Audio</p> <ul style="list-style-type: none">• Audio capture in stereo and multichannel• Recording audio to buffers and audio files• Playback of audio• Manipulation of volume• Manipulation of playback – speed, scrubbing, granularization etc.• Typical audio effects (delay, filtering, pitch-shift etc.) <p>Synthesis</p> <ul style="list-style-type: none">• Additive & subtractive synthesis – principles and practical operation• Modulation synthesis (RM, AM & FM) - principles and musical operation• Modular synthesis concepts (voltage control etc.) using contemporary virtual modular synthesisers and hardware examples <p>Creative Techniques</p> <ul style="list-style-type: none">• Innovative sound manipulation (e.g. Granularization, scrubbing etc.)• Innovative control (e.g. randomness, probability, controller manipulation etc.)• Mapping between domains (e.g. video to audio, MIDI to video etc.)• Creating a live performance instrument
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