<p style="text-align:center">**Module Template for New and Revised Modules[1]**</p>

Module Code	EEMT18
Module Name	INTRODUCTION TO MAX
ECTS Weighting[2]	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	
Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline	On successful completion of this module students will gain: LO1. Proficiency in the design and implementation of programs in Max. LO2. The problem-solving skills that enable them to independently bring creative projects from concept to implementation LO3. An understanding of the core concepts in sound and music computing. LO4. An understanding of interaction design for creative applications. LO5. An understanding of image and video processing for creative applications. LO6. A strong foundation from which to continuously develop their Max programming skills in an independent manner. Graduate Attributes: levels of attainment To act responsibly - Attained To think independently - Attained To develop continuously - Enhanced To communicate effectively - Enhanced
Module Content	This module introduces students to the Max visual programming language. Students will learn the core concepts in visual programming, sound and music computing, interaction design, and image and video processing for creative applications. The primary aim of the module is for students to gain fluency in Max and develop the problem-solving skills that enable them to independently bring creative projects from concept to implementation. The module will also provide students with an understanding of the theoretical principles underlying Max programming. As such classes will include both theoretical and practical components. This approach provides the student with a concrete set of tools for use while developing the ability to independently develop solutions and create new solutions for particular projects. This approach provides the student with a concrete set of useful tools and the ability to apply them in real-world contexts. Topics addressed will include: Algorithmic and Generative Music Composition Audio Recording and Sampling MIDI, OSC and Sequencing Scripting for max with JavaScript Real-time audio and video processing

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[1] An Introduction to Module Design from AISHE provides a great deal of information on designing and re-designing modules.

[2] TEP Glossary

Sound Synthesis techniques
Video Mixing
Effect Design
Midi and audio control of video
Working with live video input
Colour Tracking
Compositing
Video control of audio
OpenGL & 3D image processing
Hardware Controllers
Sensors
Serial Communications
ASCII Encoding
Node.JS for max
Machine Learning in max with Javascript and Node.js
Principles of interface design
Creating standalone software

Teaching and Learning Methods	Assessment of this module is by practical assignment work. Students are required to complete 2 assignments. These assignments attract a mark of 40% and 60%, respectively. The first assignment consists of a set of problem-solving exercises based on material covered in the first 4 weeks. The assignment is issued in week 1 and due in week 8. Students will be required to build small modules and Max patches, and to provide a written report detailing their conceptual understanding of their work. For this first assignment, marks are awarded as follows: Report – 10%; Programming 30%. The second assignment requires that students design and implement a large-scale Max program for real-time performance or installation with a specific use or kinds of use in mind. The student may, for example, wish to design a patch for use in a particular installation. Other students may prefer to author a more generalised patch for live performance. In any case, the context of use and the suitability of the student's design to this use must be clear. This assignment is issued in week 1 and due in week 12. The student is be expected to display the ability to innovate based on the material presented in class. A report detailing the conceptual framework employed and details of the design must be submitted. For this second assignment, marks are awarded as follows: Report 10%; Programming 50%.

Assessment Details[3] **Please include the following:** • **Assessment Component** • **Assessment description** • **Learning Outcome(s) addressed** • **% of total** • **Assessment due date**	Assessment Component	Assessment Description	LO Addressed	% of total	Week due
	Assignment 1	Coding project w/report	1-3	40	8
	Assignment 2	Coding project w/report	1-6	60	12

Reassessment Requirements	n/a

Contact Hours and Indicative Student Workload[3]	**Contact hours:** 22 x 1-hour lectures
	Independent Study (preparation for course and review of materials): 33
	Independent Study (preparation for assessment, incl. completion of assessment): 45

Recommended Reading List	Alessandro Cipriani and Maurizio Giri: Electronic Music and Sound Design; Todd Winkler: Composing Interactive Music: techniques and ideas using Max Website: http://www.cycling74.com/section/tutorials
Module Pre-requisite	n/a
Module Co-requisite	n/a
Module Website	https://www.tcd.ie/eleceng/mmt/postgraduate/semester-1/max/index.php
Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	n/a
Module Approval Date	
Approved by	
Academic Start Year	

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[3] TEP Guidelines on Workload and Assessment

Academic Year of Date