PAPER OUTLINE 2010

Paper Code & Title:	**CMPO 110** *Introduction to Computer Music Programming*
Year:	2010 **Points:** 15
CRN:	15555 **Trimester:** 2/3 **Campus:** NZSM - VUW Kelburn
Key dates:	Teaching dates: 12 July–15 October 2010
	Study week: 18 October–22 October 2010
	Examination/ 22 October–13 November 2010
	Assessment period: *NB: For courses with exams, students must be available to attend the exam at any time during this period.*
	Withdrawal dates: Information on withdrawals and refunds may be found at: http://www.victoria.ac.nz/home/admisenrol/payments/withdrawlsrefunds.aspx
Prerequisites:	*None*
Corequisites:	*None*
Restrictions:	*MUSI 104, NZSM 102, 181*

Paper Co-ordinator:	Ajay Kapur
Contact phone:	04 463 7426 **Email:** ajay@karmetik.com
Office located at:	92 FT 203
Office hours:	Tuesday, 11:00am – 12:50pm (92 FT 203)

Tutors:	Jordan Hochenbaum **Email:** jhochenbaum@gmail.com
	Owen Vallis owensvallis@gmail.com
Class times/rooms:	Tuesday, 9:00am – 10:50am (77 Fairlie Tce, Room LT 306)
Workshop times/rooms:	
Tutorial times/rooms:	Monday, 3:30pm - 5:30pm (EMS 4)

Classes with tutorials:
Tutorials commence in the second week of the trimester. Groups will be posted on Blackboard and/or on the noticeboard outside the office on the NZSM Kelburn campus at the start of Week 2.

PAPER PRESCRIPTION

An introduction to object-oriented computer music programming languages, and their use in designing custom software for unique musical expression. Projects cover techniques of synthesis, analysis, and the development of interactive performance tools for a live performance or short composition.

LEARNING OUTCOMES

1. be able to use a variety of music technology tools competently and creatively
2. understand basic concepts in music technology
3. have an overview of the various genres associated with sonic art
4. be able to apply basic interpretative and analytical concepts to interpreting sonic art

EXPECTED WORKLOAD

A 15-point second-trimester paper should require at least 150 hours work (including class time). This means that in term time, the midterm break and study week you should be prepared to spend on average 12 hours per week involved in activities such as attending classes, reading, listening to recommended recordings and preparing assignments.

COURSE CONTENT & DELIVERY

This course comprises one 2-hour lecture per week and one 1.5-hour workshop per week, and one 2-hour tutorial per week. During tutorials, a graduate tutor will guide students in discussion of course readings and/or set works, or assist with/give feedback on work in progress, where appropriate. During workshops, classes will come together to listen to student performances, as well as presentations by staff and guest artists.

This course provides an introduction to object-oriented computer music programming languages, and how students can use them to make custom software for unique musical expression. ChucK, a strongly-timed computer music language, will be introduced. An overview of general programming concepts including types, arrays, control structures, classes and objects will be presented. How to use ChucK for programming real-time systems incorporating MIDI devices will also be described. Each student will present a final project which demonstrates how ChucK can be used in writing synthesis, analysis, or interactive performance tools for a live performance or short composition.

Week 1: Introduction, Installation, Types and Variables, Control Structures
Week 2: Random Numbers, Math, Mic Input
Week 3: Sound Files, Panning, Arrays
Week 4: Functions, Unit Generators
Week 5: Concurrency & Shreds
Week 6: Events: Polling vs. Events, MIDI, OSC
Week 7: Classes and Objects
Week 8: MIDI Objects
Week 9: SMELT, Laptop Control
Week 10: Student Final Project Preparation
Week 11: Student Final Project Preparation
Week 12: Student Final Project Presentation

READINGS, MATERIALS & EQUIPMENT

G. Wang. *ChucK Programming Language*. PhD Dissertation. Princeton University, 2008.

Reference: http://chuck.cs.princeton.edu

ASSESSMENT REQUIREMENTS

Creative projects using music technology 60%; Outcomes 1, 2
Short listening and analysis assignments 20%; Outcomes 3, 4
In-class tests (2 x 10%) 20%; Outcomes 2, 3, 4

Assessment name	Word length / approx. duration	Due date	% of final grade
Assignment 1	30 second	July 20, 2010	10
Assignment 2	30 second	July 27, 2010	10
Assignment 3	30 second	Aug 3, 2010	10
Assignment 4	30 second	Aug 10, 2010	10
MidTerm Test	n/a	Aug 17, 2010	10
Assignment 5	30 second	Sept 14, 2010	10
Assignment 6	30 second	Sept 28, 2010	10
Final Test	n/a	Oct 5, 2010	10
Final Project	2 min	Oct 12, 2010	20

Deposit and collection of written work
Assignments should be submitted via Blackboard.

Marked assignments will be returned to students via Blackboard.

Deadlines for written work:
Written work must be handed in by the due dates. In fairness to other students, unless a medical certificate is produced, work handed in after 5pm on the due date will be subject to a 5% demerit on your grade, increasing by 5% each further working day it is overdue.

Students, who for exceptional reasons can justify an extension for the essay, must apply to the Paper Co-ordinator before the due date. Please note that NO extensions can be granted for tutorial assignments.

ASSIGNMENT PRESENTATION

Written work should be presented according to the guidelines set out in the **NZSM Guidelines for Academic Work,** which can be downloaded as a PDF document from the NZSM Website: *http://www.nzsm.ac.nz/study/programmes.aspx* (in the right-hand column). Five percent (5%) will be deducted for written work that does not conform to these standards.

Notated works must be presented according to the guidelines set down in the **NZSM Composition and Orchestration Style Guide,** available as a PDF document from the NZSM Website: h*ttp://www.nzsm.ac.nz/study/composition.aspx* (in the right-hand column). Five percent (5%) will be deducted for notated work that clearly does not conform to these standards.

Sonic Arts works should be submitted as a clearly labelled Audio CD, or, for multimedia works, as a DVD or as a Quicktime data file on a data CD-ROM.

MANDATORY PAPER REQUIREMENTS

To gain a pass in this course each student must:
  a) Submit each piece of work or item of assessment specified for this course, on or by the specified dates (subject to such provisions as are stated for late submission of work).
  b) Attend at least 80% of lectures, tutorials and workshops related to this course.
  c) Present final composition in Class.

If for health reasons you are unable to complete all the work required for assessment purposes for this Paper by 13 November you may, on presentation of a medical certificate, have the date for submission extended by the Director, NZSM.

COMMUNICATION OF ADDITIONAL INFORMATION/INFORMATION ON CHANGES

Official notices issued after the paper has commenced will be posted on the board outside the NZSM office on the Kelburn campus. Notices concerning a number of papers will also be posted on Blackboard. The Paper Co-ordinator will specify if Blackboard will be used.

CLASS REPRESENTATIVES

Where appropriate, a class representative will be elected in the first class, and that person's name and contact details will be available to VUWSA and/or MAWSA, the Course Co-ordinator and the class. The class representative provides a communication channel to liaise with the Course Co-ordinator on behalf of students.

ACADEMIC INTEGRITY AND PLAGIARISM

Academic integrity means that university staff and students, in their teaching and learning, are expected to treat others honestly, fairly and with respect at all times. It is not acceptable to mistreat academic, intellectual or creative work that has been done by other people by representing it as your own original work.

Academic integrity is important because it is the core value on which the University's learning, teaching and research activities are based. The NZSM's reputation for academic integrity adds value to your qualification.

The NZSM defines plagiarism as presenting someone else's work as if it were your own, whether you mean to or not. 'Someone else's work' means anything that is not your own idea. Even if it is presented in your own style, you must acknowledge your sources fully and appropriately. This includes:

- Material from books, journals or any other printed source
- The work of other students or staff
- Information from the internet
- Software programs and other electronic material
- Designs and ideas
- The organisation or structuring of any such material.

Find out more about plagiarism, how to avoid it, and penalties, on the NZSM website:
http://www.nzsm.ac.nz/about/statutes-policies.aspx#plagiarism

GENERAL NZSM POLICIES AND STATUTES

Students should familiarise themselves with the NZSM's policies and statutes, especially those regarding Personal Courses of Study, Academic Grievances, and Staff and Student Conduct. Please see *http://www.nzsm.ac.nz/about/statutes-policies.aspx*

For any statutes relating to the particular qualifications being studied, see either the *Massey University Calendar* or the *Victoria University Calendar*.

Information about Student Services, including Academic Mentoring for Māori and Pacific Students, and support for Students with Disabilities, is to be found in the *NZSM Student Handbook* (available from the NZSM offices on each campus).

EVENTS

Regular events are held during trimesters 1 & 2 at all NZSM campuses. These events are for the benefit of all students, and include performances, masterclasses, special lectures and workshops given by staff, students and visiting artists.

All students are expected to read the NZSM website for the latest events listings, and keep time free to attend the weekly lunchtime concert on Friday at 12.10 pm, along with other events as required.

Events & Marketing Coordinator: Craig Ireson
Phone: (04) 801 5799 ext 62119   **Email**:   *craig.ireson@nzsm.ac.nz*
Website: *http://www.nzsm.ac.nz/events/*