



PAPER OUTLINE 2011

Paper Code & Title:	CMPO 281 <i>Computer Music Programming for Live Electronics</i>				
Year:	2011	Points:	15		
CRN:	19767	Trimester:	2/3	Campus:	NZSM - VUW Kelburn
Key dates:	Teaching dates:	11 July–14 October 2011			
	Mid-trimester break:	22 August–4 September 2011			
	Study week:	17–21 October 2011			
	Exam/Assessment period:	21 October–12 November 2011			
	(where applicable)	<i>NB: For courses with exams, students must be available to attend the exam at any time during this period.</i>			
	Withdrawal dates:	Information on withdrawals and refunds may be found at: http://www.victoria.ac.nz/home/admisenrol/payments/withdrawalsrefunds.aspx			
Prerequisites:	CMPO 181 or 20 100-level pts				
Corequisites:	None				
Restrictions:	CMPO 110				

Paper Co-ordinator: Ajay Kapur
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Office hours: Mondays, 10:30am–12:00pm (Room 203, 92 Fairlie Terrace)

Tutors: Jim Murphy **Email:** jim.w.murphy@gmail.com
Jordan Hochenbaum jhochenbaum@gmail.com
Owen Vallis owensvallis@gmail.com

Class times/rooms: Monday, Thursday, 3:10pm–4:30pm (Room MSEMS4)

Tutorial times/rooms: TBA

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

A study of object-oriented computer music programming languages, including general programming concepts, synthesis, analysis and real-time systems, and their use in music technology-based creative practice.

COURSE CONTENT & DELIVERY

This course comprises two 1.5-hour lectures per week and one 1-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.

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. ChuckK, 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 ChuckK for programming real-time systems incorporating MIDI devices will also be described. Each student will present a final project which demonstrates how ChuckK 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. *The ChuckK Audio Programming Language*. PhD Dissertation. Princeton University, 2008.

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

LEARNING OUTCOMES

Students who successfully complete this course will:

1. Have demonstrated competency in basic programming skills for live electronics
2. Have demonstrated an understanding of the concepts of object orientation, concurrency and multi-threading in a sonic/musical context
3. Be able to build a system for real-time control of musical sound.

ASSESSMENT

Approved assessment regime

The following assessment regime for this paper has been approved by the NZSM Academic Committee:

Between 5 and 10 minor assignments. Related to learning outcomes 1 and 2. (60%)

Two in-class tests. Related to learning outcomes 1 and 2. (20%)

Short creative project. Related to learning outcomes 1 and 3. (20%)

Assessment details for this offering

<i>Assessment name</i>	<i>Learning outcome(s)</i>	<i>Due date</i>	<i>% of final grade</i>
Assignment 1	1,2	July 18, 2011	10
Assignment 2	1,2	July 25, 2011	10
Assignment 3	1,2	August 1, 2011	10
Assignment 4	1,2	August 8, 2011	10
Assignment 5	1,2	August 18, 2011	10
Midterm Test	1,2	September 5, 2011	10
Assignment 6	1,2	September 29, 2011	10
Final Test	1,2	October 3, 2011	10
Final Project	1,3	October 10, 2011	20

LATE PENALTIES

Assignments must be submitted by the due dates. In fairness to other students, unless a medical certificate is produced, assessment submitted after 5:00pm 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 an item of assessment, must apply to the course co-ordinator before the due date. Please note that NO extensions can be granted for tutorial assignments.

DEPOSIT AND COLLECTION OF ASSESSMENT

Assignments should be deposited via Blackboard.

Marked assignments will be returned via Blackboard.

SCALING OF GRADES

To obtain a fair distribution of marks relative to assignment difficulty, scaling may be employed on some or all assessment items, in accordance with guidelines set out in the VUW Assessment Handbook:

http://www.victoria.ac.nz/home/about_victoria/avcacademic/publications/assessment-handbook.pdf

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.

Sonic Arts work 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) Complete each item of assessment worth at least 10% specified for this course (subject to penalties for late submission of work).
- b) Attend at least 80% of lectures and 80% of tutorials (if relevant) related to this course.

If, for health reasons, you are unable to complete all the work required for assessment purposes for this paper by 12 November, you may, on presentation of a medical certificate, have the date for submission extended by the Director, NZSM.

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 10 hours per week involved in activities such as attending classes, reading, listening to recommended recordings and preparing assignments.

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.

STUDENT REPRESENTATIVES

Student representatives for the NZSM are elected in the first week of the trimester, and their names and contact details will be available to VUWSA and/or MAWSA, the Course Co-ordinator and to each class.

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, 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 12:10pm, along with other events as required. Students should sign up to the **Dawn Chorus**, the NZSM's events e-newsletter, by emailing events@nzsm.ac.nz with "subscribe dawn chorus" in the subject line.

Events & Marketing Co-ordinator: Stephen Gibbs
Phone: (04) 801 5799 ext 62119 **Email:** stephen.gibbs@nzsm.ac.nz
Website: <http://www.nzsm.ac.nz/events/>