

# Syllabus: Visual Programming II, Winter Quarter 2012

## Course Overview

This course is an intermediate-to-advance visual programming using course using Cycling '74's Max/MSP and Jitter software. The course will cover techniques and technologies for visualization and sonification, and will provide the framework for advanced. This class requires participants to have taken the Visual Programming I class, but no other requirements are necessary. A significant amount of class time will be used for programming work, but students will also be required to spend extensive time out of class for programming and extended learning.

## Course Objectives

By the end of the course, you will:

- Have an extensive knowledge of OpenGL techniques within Max.
- Have an extensive knowledge of audio synthesis within Max.
- Understand the treatment of data for visualization and sonification.
- Work with external controllers and sensors for interactive artwork.
- Have created several advanced media art pieces.

## Materials

The materials required for the course:

- There is no text required for this course. Most of the information that will be referenced will be available on the Internet.
- The software – Max/MSP/Jitter (by Cycling '74) – is available on the University's lab computers. You may choose to purchase a license directly from Cycling '74, and are strongly encouraged to use (and bring to class) a personal laptop for your work.
- You should have at least 4Gb of portable storage (flash or thumb drives, iPod or portable hard drive) available for backup and project transfer.

## Policies

This class will combine individual work in the lab with individual and group instruction. Students must come to class prepared to work. Showing up without necessary files or equipment is the same as not attending. Although students may also use their home computers to work on projects, this is not a valid reason to not attend. It will be necessary to work outside of class to complete all projects and assignments. Computer failure, equipment malfunction, and file corruption are not accepted as excuses for late or unfinished work so **BACK UP YOUR WORK**. You will need to increment your file saves in order to be sure you do not lose weeks worth of work with one save.

The computer labs are used by many students, so the labs are in high demand. Budget time accordingly as "unavailable computer time" will also not be accepted as an excuse. Participation in all class discussions and critiques as well as constructive use of lab time is considered in the final grade for each project. At any time in the creation process students should be able to produce notes, drawings, charts or other work products, as well as discuss and articulate the nature of their work to their peers as well as to the instructor.

Attendance is mandatory. Attending class is the responsibility of the student. Lectures and demonstrations may be given or changed without notice and every class will start with professional examples of relevant work so punctuality is essential. An individual who is absent, late or sleeps during class will be responsible for getting the information missed. Students will be allowed two (2) absences without penalty. Any absence in excess of two will result in a 10% grade reduction of the final grade for the course per absence. All absences will be counted. A student who misses 15 minutes or more of a class (late or leave early) is considered absent. A student who sleeps will be considered absent. A student who will acquire absences due to a University sponsored activities must provide necessary documentation from the appropriate office

prior to the absence to make any special arrangements for missed work.

For any absence due to religious beliefs, written notification should be provided in the first two weeks of the quarter; the student is responsible for any missed work. Any special medical or personal problems that occur, where absenteeism will exceed the allowed two, will require verification by a physician or emergency medical association (a letter from Student Affairs merely explains an absence, and will not qualify as an excuse). These situations may require course withdrawal or "Incomplete" status on the final grade. Four absences mandate an automatic grade of "F." Two late arrivals (less than 15 min.) will equal one absence.

### **Grading**

Grades will consist of the following:

- In-class Assignments @ 20%
- Project 1 @ 40%
- Project 2 @ 40%

Projects and assignments will be graded on the following basis, listed in order of importance.

- Development, creativity and originality of concept or problem solution
- Technical development and demonstration of skills
- Craftsmanship and presentation of work
- Participation in classroom discussions and critiques in connection with the work

Your grade will be calculated according to the following standards:

A = Excellent (100-90%)- work pushes far beyond the project stipulations and shows clear evidence of extreme time, dedication, care and thought about the project as evidenced in effective execution of original/thoughtful ideas.

B = Good (80-89%)- work exceeds the basic criteria, provides creative solutions to the problems and shows technical proficiency. Student has made the project "theirs" in that they do not need to explain project stipulations before showing the work.

C = Average (70-79%)- work fulfills all requirements, does not expand on techniques shown in class, ideas are close derivations of popular culture.

D = Unsatisfactory (60-69%)- work might meet basic criteria but in a careless and/or thoughtless way. Technical proficiency is rudimentary and no chances were taken.

F = Failure (0-59%)- the work does not meet the basic criteria.

Late projects will be penalized a letter grade **for every day they are late**. Turning a project in after the beginning of the class counts as one day late.

### **Lab Rules**

It is your responsibility to adhere to all rules regarding the use of the DMS labs and equipment. You will be given a sheet stating all rules. Please see Elizabeth Harris in the DMS office before class if you need a form to access the DMS lab.

### **Plagiarism**

Solutions to assignments you submit will be your own work. A student who is discovered to have plagiarized others' work will immediately receive a grade of F for the course, and a recommendation for

disciplinary action will be forwarded to the Dean of Students.

Please note that I am an active participant of all online forums and mailing lists involved in visual programming; if you request others to do your work through any online forum, this will be treated as plagiarism (since you are not doing your own work), and will be subject to the above penalties.

### **Course Schedule and Downloads**

Most of the information necessary for the course will be available at the following website:

<http://www.darwingrosse.com/20Beyond/index.html>

This will include the high-level course outline, downloadable content required for the class, and examples of programming similar to what will be required for the in-class projects. Each week's files should be downloaded and installed prior to class so that there are no delays in the teaching.

Each class will be in two parts: lecture and lab. During the lecture part of the class, concepts will be discussed and patches examined. During the lab part, students will be required to complete an in-class project. There are also two major projects due during the course of the quarter. This will be explained in more detail during class time.

The overview schedule is as follows:

Week 1 (01/03/2012): Visuals – Basic OpenGL  
Week 2 (01/10/2012): Audio – Basic Synthesis  
Week 3 (01/17/2012): Visuals – Working with Models and Meshes  
Week 4 (01/24/2012): Audio – Complex Waveform Generation  
Week 5 (01/31/2012): Project #1 – Installation  
Week 6 (02/07/2012): Visuals – GL Animation and Physics  
Week 7 (02/14/2012): Audio – Sequencing and Interactivity  
Week 8 (02/21/2012): General – Data Stream Management  
Week 9 (02/28/2012): General – External Devices and Connectivity  
Week 10 (03/06/2012): Project #2 – Performance

***Since this is a mixed graduate/undergraduate course, specific requirements are to be provided for graduate-level studies. Graduate students will be required to produce a report for each of the two projects, describing the concept behind the work, how the result fits within the context of the conceptual basis, and an overview of the development process behind the project. This report should be 10-15 double-spaced pages in length. The paper is due on the date of project presentation.***

This schedule is subject to change based on class interaction, class schedules (and/or weather closure) and instructor availability. Please find any changes at the website listed above.

If you have any questions or comments, you can email me at [darwin.grosse@gmail.com](mailto:darwin.grosse@gmail.com). I do not have regular office hours, but am available for one-on-one meetings subject to prior scheduling.