

Course: **Introduction to Modular Synthesis**
Instructor: Meason Wiley
Length of Class: 3 hours per week
Credit Value: 3 hours
Office Hours: TBA
Required Text: TBA
Contact: cyclespersecond@gmail.com
Course Website: www.cyclespersecond.net/ims

Course Objective:

Students will receive an introduction to basic concepts of modular synthesis and visual programming in order to build custom software instruments and effects.

Course Overview:

This is an introductory course that covers some of the fundamental elements of modular synthesis and visual programming. Students will learn how to build basic custom instruments and effects using Reaktor software, and will also receive an introduction to Object-Oriented Programming using the open source programming language Chuck. Additional concepts include a continuation of various synthesis methods covered in Synthesis I, as well as new concepts such as granular synthesis, sampling, basic mathematics and signal processing, as well as an introduction to generative and probability-based electronic composition. Students will be expected to spend additional time outside of class either in the MIDI lab or at home working on assignments. All course notes and additional information will be available on the Course Website: www.cyclespersecond.net/ims

Attendance Policy

Due to the cumulative and technical nature of this subject matter, any classes missed will seriously jeopardize the successful comprehension and completion of this course. Any UNEXCUSED absence will result in a 10% grade reduction. More than three absences will result in a failing grade for the course unless the instructor has been notified IN ADVANCE of any extenuating circumstances. The best way to avoid attendance issues in this course is to contact me prior to missing class.

Grading Policy

Attendance	30%
Assignments/Participation	40%
Projects	30%

Extra Credit

Extra credit may be issued on a case-by-case basis, should a student require additional assistance.

Introduction to Modular Synthesis - ACC Northridge Campus

(The following course schedule is meant to be a guideline for the class and is subject to change.)

Course Schedule

- Week 1 Course Introduction: Review basics from Synthesis I. What is Modular Synthesis & Visual Programming?
- Week 2 Reaktor - Basic Signal Flow, Routing, Building Blocks, Macros, Event vs Audio, etc. Build a simple Subtractive Synthesizer.
- Week 3 Filters, Envelopes, FM, Amplitude Modulation, Pitch vs Frequency. Start building a Moog Synthesizer Modeler.
- Week 4 LFO's, Ring Modulation. Continue work on Moog Synthesizer Modeler.
- Week 5 Sound Design lecture. Build a synthesis-based drum macro.
- Week 6 Reaktor Core lecture. What is a sequencer? Build a counter in Reaktor Core.
- Week 7 Audio Tables/Event Tables. Build a simple arpeggiator. MIDI out / MIDI in / Open Sound Control.
- Week 8 Project 1 (Mid Term) Due - Composition I. Discuss compositions in class.
- Week 9 Granular Synthesis lecture. Pitch vs Time. What is a Transform? Build a Grain Synth.
- Week 10 "Deeper down the Rabbit Hole" - An introduction to Stacked Macros. Start building a Synthesis-based Drum Sequencer.
- Week 11 Continuation of Week 10. Advanced gate signals, routing, GUIs. Continue working on the Drum Sequencer.
- Week 12 Finish basic Drum Sequencer. How do we customize our new instrument? Randomization, Probability, Pitch Shifting, Choppers.
- Week 13 Introduction to Object-Oriented Programming (Chuck Lecture).
- Week 14 Continue Chuck Lecture from Week 13. Write some code!
- Week 15 Review Semester - Additional Notes, Resources, etc.
- Week 16 Project 2 (Final) Due - Composition II. Discuss compositions in class.