

Fall 2018
MUC 7938

M8, W8-9, MUB 147
—syllabus subject to change

Seminar in Digital Sound Processing, Control, and Composition: *Introduction to Audio Coding*

Instructor: Dr. Andrew Babcock
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Office hours: M6, W7, F6, or happily by appointment
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Course Description:

An introduction to audio coding and digital music composition using the open source software SuperCollider through guided exercises, assignments, and composition projects.

Course Objectives:

Students will learn the basics of audio coding using the slang programming language and develop software tools for real-time digital signal processing, sound design, synthesis, and computer-assisted composition. Students complete a final composition project designed to integrate different aspects of the course's topic areas using SuperCollider.

Course Materials:

Personal computer running SuperCollider software on either macOS, Windows, or Linux operating systems: <https://supercollider.github.io/>

Access to a digital audio workstation such as Reaper, Logic Audio, Ableton Live, Pro Tools, Cubase, Digital Performer, etc.

Optional Texts:

The SuperCollider Book:
<https://mitpress.mit.edu/books/supercollider-book>
(UF Library: ML74.4.S86 S86 2011)

Roads, Curtis. *The Computer Music Tutorial*. Cambridge: MIT Press, 1996.
(UF Library: MT56 .R6 1996)

Roads, Curtis. *Composing Electronic Music: A New Aesthetic*. New York: Oxford University Press, 2015.
<http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780195373233.001.0001/acprof-9780195373233>

Prerequisite:

Students are expected to have a strong command of the concepts and practice of digital sound synthesis and instrument design either through MUC 4313/5315 and MUC 4441/6444 or through equivalent courses/personal study.

Grade Distribution:

Attendance/Participation/Preparation: 20%
5 Small Projects/Assignments: 35%
Final Composition Project: 45%

Grades on projects and assignments are based on the following scale:

A = 93–100%
A- = 90–92%
B+ = 87–89%
B = 83–86%
B- = 80–82%
C+ = 77–79%
C = 73–76%
C- = 70–72%
D+ = 67–69%
D = 63–66%
D- = 60–62%
E = below 60%

Information on current UF grading policies for assigning grade points:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.

Course Schedule (tentative and subject to change)

<i>Week</i>	<i>Topic</i>
1) Aug. 22	Course Overview, Review Syllabus, Introduction to SuperCollider
2) Aug. 27 & 29	Introduction to SuperCollider (cont.), Server/Client, Programming Fundamentals, UGens, Functions
3) *holiday – Sep. 3 Sep. 5	Functions, Array Manipulation, Buffers
4) Sep. 10 & 12	Granular Sampling, Multichannel Expansion
5) Sep. 17 & 19	Filtering, Simulating Space, Waveshaping
6) Sep. 24 & 26	SynthDefs, Envelopes, Managing Samples
7) Oct. 1 & 3	SynthDefs (cont.), Making Classes
8) Oct. 8 & 10	Composing with Patterns, Pitch/Rate Manipulation
9) Oct. 15 & 17	Composing with Patterns
10) Oct. 22 & 24	Iteration, Conditionals, Seeding
11) Oct. 29 & Oct. 31	Routines, Tasks, Probability
12) Nov. 5 & 7	Routines, Tasks, Probability
13) *holiday – Nov. 12 Nov. 14	Audio Feature Tracking, Spectral Domain Signal Processing
14) Nov. 19 *holiday – Nov. 21	Array Interpolation, Markovian Analysis
15) Nov. 26 & 28	MIDI to DAW Sequencing
16) Dec. 3 & 5	MIDI Controllers, GUI Development
17) TBD	Final Projects Gathering

Course Guidelines:

Attendance Policy

Attendance is required for participation in this course. Should you miss class, it is your responsibility to obtain notes from the day(s) you were absent not from the instructor, but rather from one of your peers. Please note that once you acquire unexcused absences exceeding 3 class meetings, your final grade will suffer one whole letter grade.

Late Work

Late work is reduced one full letter grade for every day it is past due (ex. A to B). However, if you have extenuating circumstances please let me know as far in advance from the due date as you can.

Email

Please check your UF email account regularly, as I will be sending out information about assignments, important dates, and various handouts from time to time.

Cell Phones

Cell phone use is not permitted during class time. Please keep your phone off the computer desk and tucked away in your bag or pocket. Students caught using their phones during class will be marked absent for the day.

Academic Honor Policy:

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://sccr.dso.ufl.edu/students/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TA in this class.

Online Course Evaluations:

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given

specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>

Accommodations for Students with Disabilities:

Students with disabilities requesting accommodations should first register with the Disability Resource Center ((352)-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Health and Wellness Resources:

U Matter, We Care:

If you or a friend is in distress, please contact umatter@ufl.edu or (352) 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: <https://counseling.ufl.edu/about/> (352)-392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS) : Student Health Care Center, 392-1161.

University Police Department, (352)-392-1111 (or 9-1-1 for emergencies):
<http://www.police.ufl.edu/>

Academic Resources:

E-learning technical support, (352)-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu <https://lss.at.ufl.edu/help.shtml>

Career Resource Center, Reitz Union, (352)-392-1601. Career assistance and counseling:
<http://www.crc.ufl.edu/>

Library Support, Various ways to receive assistance with respect to using the libraries or finding resources: <https://cms.uflib.ufl.edu/ask>

Teaching Center, Broward Hall, (352)-392-2010 or (352)-392-6420. General study skills and tutoring: <http://teachingcenter.ufl.edu/>

Writing Studio, 302 Tigert Hall, (352)-846-1138. Help brainstorming, formatting, and writing papers: <https://writing.ufl.edu/writing-studio/>

Student Complaints Campus:

https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>