San José State University
School of Music and Dance
Music 167, Electro-Acoustic Music/Sound Design

Fall 2015

Instructor: Pablo E. Furman, Ph.D.
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Office Hours: M, W 1:15 – 2:00 PM, and by appointment or email
Class Days/Time: W, 3:30 – 6:00 PM
Classroom: Music 226

Prerequisites: Basic Music Theory Core or permission of the instructor. Basic understanding of math and trigonometry. A good review is found in this web site: http://catcode.com/trig

Course Description
The focus of this course is the thorough understanding of contrapuntal practices in the music literature.

Course Goals and Student Learning Objectives
The goal of the course for each student is to produce a three to five-minute (maximum) audio project (i.e., musical composition or sound design project). This is usually a recorded composition/collage, sound design project for digital media or audio track. The final examination consists of a presentation/performance of a finished project at the end of the semester and it may include a short written component based on course topics.

Students will gain practical and theoretical knowledge of the fundamental concepts of sound synthesis such as additive and subtractive synthesis, frequency modulation, and how to create specific sounds based on real-life models. Furthermore, students will learn the principles behind the most common sound processing tools such as reverberation, time delay, flanging and chorus effect, and spectral filtering, etc., and how to use them creatively (as sound design processors). Students will learn how to record and manipulate real sound sources using current computer...
technology and apply the techniques learned in class to create individual sound design projects or electronic music compositions/collages.

As a part of the School of Music and Dance at SJSU, the course emphasizes the sound and musical/artistic aspects of the craft. Judgments of quality are based upon aesthetic considerations (quality of sound material and/or project within its artistic context) as well as knowledge of the technology.

By the end of the semester students will know how to define principles of synthesis and to:

1. Describe how a basic analog synthesizer and a FM synthesizer work.
2. Describe an envelope generator and give one concrete and practical example of its use.
3. Use a sequencer and hardware synthesizer to create a short sound collage.
4. Create electronic instruments (sounds) that emulate the sounds of a violin, a clarinet, bell and a piano using an analog synthesizer (or software emulation).
5. Same as above but using FM synthesis.
6. Edit collected sounds from every day various sources.
7. Generate a medium length sound event based on a graphed model or wave shape and envelope (i.e., ADSR).
8. Create a sound collage utilizing analog, FM and re-synthesis technology.
9. Using analog, FM, and re-synthesized sounds create a 3 to 5 minute collage/composition along with MIDI-triggered events and external synthesizers.

**Required Texts/Readings**

*Sound Synthesis and Sampling*, by Martin Russ. Available at the University bookstore or any online retailer.

**Reading Assignments**

Assigned readings are from the course textbook. This material will not be the direct subject of the weekly lectures but will compliment and amplify the discussion topics. Students are encouraged to bring up in class issues covered in the book for clarification and discussion. Students can pursue the textbook readings at their own pace but should keep up with topics covered in class.

**Classroom Protocol**

Use of mobile communications devices in class is not allowed, especially during exams, so turn them off **before** entering class (off, not just on “silent mode”).

**Assignments and Grading Policy**

A final grade will be assessed on the basis of:

a) Weekly assignments (70%)  
b) A **final project (3 to 5 minutes in length)** (30%). The topics for the written portion will be based on lecture and studio materials, and will be assigned at the appropriate time.
c) Concerts/events: There may be some concerts/events directly related to the topics of the course that students may be required to attend or participate in. These events will be announced at the appropriate time.

Assignments will be due and reviewed on the following class meeting (one week). An “F” will be recorded for assignments not prepared or completed in time. They will be evaluated based on quality of the material and the proficiency demonstrated in applying the techniques discussed in class.

**Grade System**

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<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>(A-, A)</td>
<td>$\geq 90$</td>
</tr>
<tr>
<td>(B-, B, B+)</td>
<td>$80 &lt; 90$</td>
</tr>
<tr>
<td>(C-, C, C+)</td>
<td>$70 \leq 80$</td>
</tr>
<tr>
<td>(D-, D, D+)</td>
<td>$60 &lt; 70$</td>
</tr>
<tr>
<td>(F)</td>
<td>$&lt; 59$</td>
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There are no make-up provisions for the tests or final exam except for compelling reasons as stated in university policy [see schedule of classes: http://info.sjsu.edu/home/schedules.html]

**Class/Lab Participation**

As this course combines lectures with creative/skills oriented discipline, the time spent developing those skills will be a major factor in the final grade. Every student’s lab time will be computer-monitored on a regular basis. While it is not essential that weekly studio sessions be at the assigned time, students must complete their lab assignments.

**Music Use Fee**

Music majors and minors must pay a music equipment use fee each semester they are enrolled at San José State University. The fee must be paid directly to the SJSU Cashier and the receipt brought to the Music Office before completing University registration. Applied music instruction will not be authorized until this fee is paid. These fees are included in the student’s bill with other registration fees.

**Attendance**

Although attendance per se is not graded, according to University policy F69-24, “Students should attend all meetings of their classes, not only because they are responsible for material discussed therein, but because active participation is frequently essential to insure maximum benefit for all members of the class.”

This is a lecture and studio course. All class members will be expected to select a regular time for studio practice in addition to attending class meetings (even though you may have your own home studio, sometimes it my be necessary to use the course lab to do further work, transfer files, etc.). It will be necessary to carefully arrange your projects with the instructor, fellow class-members, so that there will be NO conflicts with work, classes, or other obligations.

**Studio Use**

The studio is for use of course required projects only. The studio will be open during regular building hours (8:00 a.m. to 11:00 p.m.), and sometimes on weekends. As extended open building hours have a tendency to change from time to time, check with the instructor or studio manager to find out the disposition of current hours.
With a PAID Music Use Fee and your name on file for enrollment in the class you will be given a personal studio access (there is a deposit refundable when you return the card at the end of the course). To get your electronic key go to the main Music office and see Anita McClintick.

Any reports of excessive noise, improper clean-up, doors left open, or USE OF THE STUDIO WITHOUT PRIOR PERMISSION DURING OTHERWISE CLOSED HOURS will result in expulsion from the course and loss of studio privileges.

UNDER ANY CIRCUMSTANCE, NO PERSON IS ALLOWED IN THE STUDIO WITHOUT A VALID MUSIC FEE CARD AND STUDIO AUTHORIZATION. AT THE RISK BEING EXPELLED FROM THE CLASS STUDENTS ARE NOT ALLOWED TO BRING ANYONE ELSE INTO THE STUDIO WHO IS NOT ENROLLED IN THE COURSE.

SPECIAL NOTES
Regular studio sign-up times may be altered BY THE INSTRUCTOR from time to time for special projects/sessions in the studio, or due to repairs. Make-up times will be assigned if possible.

University Policies
General Expectations, Rights and Responsibilities of the Student
As members of the academic community, students accept both the rights and responsibilities incumbent upon all members of the institution. Students are encouraged to familiarize themselves with SJSU’s policies and practices pertaining to the procedures to follow if and when questions or concerns about a class arises. See University Policy S90–5 at http://www.sjsu.edu/senate/docs/S90-5.pdf. More detailed information on a variety of related topics is available in the SJSU catalog, at http://info.sjsu.edu/web-dbgen/narr/catalog/rec-12234.12506.html. In general, it is recommended that students begin by seeking clarification or discussing concerns with their instructor. If such conversation is not possible, or if it does not serve to address the issue, it is recommended that the student contact the Department Chair as a next step.

Dropping and Adding
Students are responsible for understanding the policies and procedures about add/drop, grade forgiveness, etc. Refer to the current semester’s Catalog Policies section at http://info.sjsu.edu/static/catalog/policies.html. Add/drop deadlines can be found on the current academic calendar web page located at http://www.sjsu.edu/academic_programs/calendars/academic_calendar/. The Late Drop Policy is available at http://www.sjsu.edu/aars/policies/latedrops/policy/. Students should be aware of the current deadlines and penalties for dropping classes.
Consent for Recording of Class and Public Sharing of Instructor Material

University Policy S12-7, http://www.sjsu.edu/senate/docs/S12-7.pdf, requires students to obtain instructor’s permission to record the course and the following items to be included in the syllabus:

- “Common courtesy and professional behavior dictate that you notify someone when you are recording him/her. You must obtain the instructor’s permission to make audio or video recordings in this class. Such permission allows the recordings to be used for your private, study purposes only. The recordings are the intellectual property of the instructor; you have not been given any rights to reproduce or distribute the material.”
  - It is suggested that the greensheet include the instructor’s process for granting permission, whether in writing or orally and whether for the whole semester or on a class by class basis.
  - In classes where active participation of students or guests may be on the recording, permission of those students or guests should be obtained as well.
- “Course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without his/her approval. You may not publicly share or upload instructor generated material for this course such as exam questions, lecture notes, or homework solutions without instructor consent.”

Required Amount of Work Outside of Class

Students are expected to work no less than 2 hours outside of class per unit. In the case of Music 103, a three unit course, it means no less than 6 hours per week in addition to class time:


“Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of forty-five hours over the length of the course (normally 3 hours per unit per week with 1 of the hours used for lecture) for instruction or preparation/studying or course related activities including but not limited to internships, labs, clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus.”

Academic integrity

The University Academic Integrity Policy S07-2 at http://www.sjsu.edu/senate/docs/S07-2.pdf requires you to be honest in all your academic course work. Faculty members are required to report all infractions to the office of Student Conduct and Ethical Development. The Student Conduct and Ethical Development website is available at http://www.sjsu.edu/studentconduct/.

Instances of academic dishonesty will not be tolerated. Cheating on exams or plagiarism (presenting the work of another as your own, or the use of another person’s ideas without giving proper credit) will result in a failing grade and sanctions by the University. For this class, all assignments are to be completed by the individual student unless otherwise specified. If you would like to include your assignment or any material you have submitted, or plan to submit for another class, please note that SJSU’s Academic Integrity Policy S07-2 requires approval of instructors.
Campus Policy in Compliance with the American Disabilities Act

If you need course adaptations or accommodations because of a disability, or if you need to make special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 at http://www.sjsu.edu/president/docs/directives/PD_1997-03.pdf requires that students with disabilities requesting accommodations must register with the Accessible Education Center (AEC) at http://www.sjsu.edu/aec to establish a record of their disability.
**Schedule of Topics**
(Subject to change with fair notice)

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
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<tbody>
<tr>
<td>9/23</td>
<td>Build electronic instruments with analog synthesis (or emulation).</td>
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<tr>
<td>9/30</td>
<td>Development of sound collages/compositions or sound design using the tools learned in class.</td>
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<tr>
<td>10/7</td>
<td>Midterm: Week 7 [subject to change with fair notice].</td>
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<tr>
<td>10/21</td>
<td>Use of samples as building blocks of sound design. Processing and re-synthesis (sample transformation).</td>
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<tr>
<td>10/28</td>
<td>Building sounds that emulate real life instruments or sounds. Be able to explain how they are synthesized or re-synthesized.</td>
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<tr>
<td>11/4</td>
<td>Processors as creative tools: reverberation and related frequency-dependent processes. Amplitude processors.</td>
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<tr>
<td>11/11</td>
<td>Development of electronic instruments/sounds using various techniques. Assemblage of large scale structures using analog, FM, recorded material, and processing.</td>
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<tr>
<td>11/18</td>
<td>Student projects. Development of ideas. Discussion of techniques used.</td>
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<tr>
<td>11/27</td>
<td>Partial session (Thanksgiving)</td>
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<tr>
<td>12/2</td>
<td>Student presentations – in progress final project</td>
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<tr>
<td>12/2</td>
<td>Final project presentation, 2:45 – 5:00 PM (in the 226 studio)</td>
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