Instructor:
Steve Cunningham: (323) 697-7248 (cell), (213) 821-4204 (ofc)
E-mail: cunningh@usc.edu      Skype: synthmann
Mailbox: LPB 118
Office: LPB 107
on-campus Monday/Wednesday 10 - 11:30am, Thursday 12 - 2pm; other
meetings happily scheduled by appointment.

Course Description
MTEC 474a is a hands-on course during which students will gain a complete
understanding of the entire synthesis process. Various elements will be examined and
utilized, including methods of sound creation and numerous forms of sound
modification and shaping, using a variety of software synths. Special emphasis is both
on creating unique new sounds as well as re-creating existing sounds from current
electronic music selections.

Requirements, Exams and Grading Information:
Student evaluation in 474a will consist of a variety of work. There will be one midterm
exam and one final project, both of which will be practical. Written, online, and
practical quizzes may be given from time to time. Tests and quizzes must be taken
during the scheduled times and cannot be made up at a later date.

Students are required to complete several short exercises during the semester, and
detailed instructions on how to complete these will be provided as assigned. Scheduled
lab hours will be available to students, and space will be provided on the blues.usc.edu
server for students to store their works-in-progress. In general, exercises will be due at
the beginning of class the week after they are assigned. All assignments are to be turned
in as .zip files to the Drop Box in the class folder, and must carefully follow file
management and format guidelines. Concise instructions for the Final Project will be
available at a later date.

Because of the specialized nature of this subject, attendance and participation are critical
for understanding the material and concepts covered in this class. If you cannot attend a
class, it is your responsibility to contact the professor for updates and to get notes from
a classmate. Attendance will be taken at each session and will count towards your final
grade, at the sole discretion of the Instructor. Per University policy, sessions missed due
to medical conditions require a written excuse from an M.D. for each missed session.

GRADING SUMMARY:
1. Midterm 15%
2. Final Project 25%
3. Exercises and quizzes 50% total
4. Participation 10%

Exercises are due at the beginning of class unless otherwise noted, and are considered
late from that time the end of the due day. After due day, projects will not be accepted.
Letter grades are assigned strictly by percentage: 90+ = A, 80 – 89.99 = B, 70 – 79.99 = C,
60 – 69.99 = D, < 60 = F. Grades ending in 0 but less than 4 are minus, while those
ending in 7 but less than 0 are plus (except for A, which has no plus grade). I do not
“curve” or “round” scores – please do not ask.

Academic Integrity

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Your attention is directed to the principles of Academic Integrity as outlined in the current edition of SCampus. Collaboration or sharing of information when preparing homework and projects or during any exams is expressly forbidden unless specifically allowed by the instructor.

USC is committed to the general principles of academic honesty that include and incorporate the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one's own academic work from misuse by others as well as to avoid using another’s work as one’s own. By taking this course, students are expected to understand and abide by these principles.

**Required and Supplementary Materials:**


2. **Headphones:** Professional-quality headphones with ¼” plug. Example: Sony MDR-7506. Note: headphones must be brought to EVERY class.

3. **Memory:** USB memory stick, suggested minimum size 2 GB

**Communication:**

All course material, documentation and grades will be posted on Blackboard. It is your responsibility to learn to operate Blackboard. All e-mail correspondence regarding the class will be sent to USC email accounts only, so please check yours regularly! Note: take care to file messages so your mailbox does not fill up... if it does you will not get any new messages.

**Classroom Behavior**

No sleeping or eating in class. Please exercise common courtesy during lectures and do not distract the class with talk or other disruptive behavior. If you need to carry on a non-related conversation, please do so outside of class. Use of electronic devices during class is considered disruptive. Ringing cell phones will be confiscated and given away as door prizes. Laptops may be used for note-taking only. *Anyone found surfing the web, using email or chat, or playing games on a computer during class will be asked to leave the class. Before you can be readmitted to the class you must meet with the Department Chair.*

Behavior that persistently or grossly interferes with classroom activities is considered disruptive behavior and may be subject to disciplinary action. Such behavior inhibits other students’ ability to learn and an instructor’s ability to teach. A student responsible for disruptive behavior may be required to leave class pending discussion and resolution of the problem and may be reported to the Office of Student Judicial Affairs for disciplinary action.

**Disabilities:**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to the TA if applicable) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.-5:00 p.m. Monday through Friday. The phone number for DSP is 213-740-0776.
# Class Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topic (subject to change with class progress)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>08/25</td>
<td>MIDI review, history of synthesizers, exploring software synthesizers in Logic Pro X.</td>
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<tr>
<td>2</td>
<td>09/01</td>
<td>Labor Day holiday</td>
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<tr>
<td>3</td>
<td>09/08</td>
<td>Oscillators and other sound sources (Exercise 1)</td>
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<td></td>
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<td>LAST WEEK TO DROP WITHOUT A “W”</td>
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<tr>
<td>4</td>
<td>09/15</td>
<td>Combining Oscillators; oscillator sync. (Exercise 2)</td>
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<tr>
<td>5</td>
<td>09/22</td>
<td>Amplitude and amplitude envelopes (Exercise 3)</td>
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<tr>
<td>6</td>
<td>09/29</td>
<td>Audio Filters and filter envelopes (Exercise 4)</td>
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<tr>
<td>7</td>
<td>10/06</td>
<td>Internal Modulation, dynamically auto shaping sound (Exercise 5), Midterm Exam on Wed.</td>
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<tr>
<td>8</td>
<td>10/13</td>
<td>External Control Sources; MIDI controllers and playing techniques.</td>
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<tr>
<td>10</td>
<td>10/27</td>
<td>Vocoding; the art of talking synthesizers (Exercise 7)</td>
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<tr>
<td>11</td>
<td>11/03</td>
<td>Logic Synthesizers. (Exercise 8)</td>
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<tr>
<td>12</td>
<td>11/10</td>
<td>Ableton Synthesizers. (Exercise 9). LAST WEEK TO DROP WITH A “W”</td>
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<tr>
<td>13</td>
<td>11/17</td>
<td>Moving sounds; internal sequencing, ostinato. Final project assigned.</td>
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<tr>
<td>14</td>
<td>11/24</td>
<td>Thanksgiving holiday (Monday class meets). Synthesizing “drums” (Final Project con’t)</td>
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<tr>
<td>15</td>
<td>12/01</td>
<td>Putting it all together (Final Project con’t)</td>
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<tr>
<td></td>
<td>12/08</td>
<td>Final Project Completed. FINAL PROJECT DUE SUNDAY DEC 7, 2014 – NO EXTENSIONS</td>
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