NYC College of Technology
The City University of New York
Entertainment Technology Department

MUSIC TECHNOLOGY
ENT 1260 / ST 260

3 Credits, 4 Hours (2 lecture, 2 lab)

Prerequisites
ST101- Intro to Entertainment Technology
ST103 - Electricity

Course Description
An introduction and overview of the basic techniques and components used in commercial electronic music production. Students will work on individual workstations with a variety of software. Rudiments of music theory will be covered. Introduction to synthesis, sequencing, sampling, and loop-based composition will be covered. A brief history of music technology, a detailed exploration of the MIDI specification, and the techniques of configuring hardware and software systems for optimal effectiveness will also be covered.

Projected Head Count
16 Students

Course Objectives

<table>
<thead>
<tr>
<th>INSTRUCTIONAL OBJECTIVES</th>
<th>ASSESSMENT</th>
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<tr>
<td>For the successful completion of this course, students should be able to:</td>
<td>Evaluation methods and criteria</td>
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<td>Describe the basic historical integration of electronic technology into music</td>
<td>Students will demonstrate knowledge of the <strong>historical context</strong> through discussion in class and writing assignments</td>
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<tr>
<td>Explain and apply the basic components of Music theory, such as melody, harmony, rhythm, meter, form and structure.</td>
<td>Students will demonstrate knowledge of the practical aspects of <strong>theory</strong> through quizzes and application during laboratory exercises.</td>
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<td>Operate a variety of different software applications to create a variety of basic synthesis patches, create a song using loop based software, learn basic operations of a sequencer, manipulate an existing sequence, and work with MIDI plug-ins.</td>
<td>Students will display competency in a variety of software applications mainly through laboratory exercises.</td>
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Configure and operate MIDI and studio systems

Students will demonstrate competency in hardware installation and configuration mainly through laboratory exercises.

Explain and correctly use the different types of commands available in the MIDI specification.

Students will demonstrate competency in usage of MIDI terminology usage through classroom participation and written examination.

**Teaching/Learning Methods**
- Lecture/readings
- Demonstration
- Project based labs
- Research Assignments
- Blackboard

**Required Text**

**Grading**
- Synthesis Project 10%
- Loop Project 10%
- MIDI System Project 10%
- Sequencing Project 10%
- Midterm 15%
- Quiz 15%
- Class participation 10%
- Final 20%

**Topics**

<table>
<thead>
<tr>
<th>WEEK</th>
<th>Topic</th>
<th>Lab</th>
<th>Assignment</th>
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| 1    | Introductions
Brief History |   | Text Ch 1 |
| 2    | Basic Music Concepts
Melody, Rhythm, Meter
Natural Harmonic Series
Diatonic scale
Concepts of notation |   | Ch 9 |
| 3    | Basic Music Concepts 2
Key, Harmony
Form and Structure |   | Ch 10 |
| 4    | Loop Based Composition | Garage Band | Ch 7 |
| 5    | Loop Based Composition 2 |   | Ch 11 |
| 6    | Synthesis | Reason | Ch 6 |
### Bibliography

- **MIDI for the Professional**, Lehrman, Paul and Tully, Tim, Amsco, 1993
- **GarageBand: The Missing Manual**, Pogue, David, O'Reilly, 2005
- **Music Projects with Propellerheads Reason: Grooves, Beats and Styles from Hip Hop to Techno**, Jones, Hollith, O'Reilly, 2006

### Free Applications

- Audacity
- Qlab
  - [http://figure53.com/](http://figure53.com/)
**Justification**

Digital music is having an ever-greater impact upon the world of entertainment. Many students are coming to the department with an interest in developing their skills in the area of digital music. Articulation agreements already exist with several schools, and more are being planned. Students that are not musicians, but want to have a better understanding of the role and capabilities of modern music systems would also benefit. Many enquiries about the program ask for music technology. Unfortunately, the college does not at the moment have any curricula that address this need. This course would also integrate well with the proposed Audio Engineering program proposed by ET, as well as for students from Digital Media in AD/GA.

The unique aspect that the department can provide is integration with other aspects of entertainment technology. Most if not all other programs that offer music technology courses or degrees do so within an isolated curriculum. Because all our students are required to have knowledge in many different areas, this course and the ones that follow will only help to strengthen their understanding of how music integrates with the rest of the profession. This unique approach will also help draw students that desire a more holistic education: where else will you be able to write or arrange music, and then synchronize it with moving lights, animatronics, interactive kiosks, projection, and other forms of entertainment spectacle?

Any artificial environment has long been associated with an underscore: we take it for granted when we see a movie, go to a play, hear a radio broadcast, shop in a store, or ride an elevator. The presentation of these environments therefore requires music as a major component. Music creation is a big business, and there are a number of support professions that are also available.

For example, technicians need to set up and troubleshoot extensive MIDI and audio rigs for concert and studio environments. Composers need people to help arrange music. Many musicians are not versed in the technologies, and require help and support. Audio technicians need to understand the issues and capabilities of music technology rigs when accepting audio information. Control systems need to deal with synchronization issues. Students will also benefit from a course where they have to think musically, not sonically.