



## Technology Institute for Music Educators

### **Integrating Technology into the Music Curriculum (TI:ME 2C)**

This course is required for TI:ME Level Two certification  
For more information on TI:ME Level One and Level Two certifications, please visit the  
TI:ME web page (<http://ti-me.org>)

#### **Syllabus, Student Workbook, and Course Appendices** *(Complete Student Documents)*

Joseph M. Pisano, Ph.D.  
Edited by Jay Dorfman, Ph.D.

*This course was made possible by a grant from SoundTree*

Last revision: July, 2011

Copyright © 1999, 2003, 2005, 2011 ~ The Technology Institute for Music Educators

# Table of Contents

<b>Syllabus</b> .....	3
Description .....	3
Pre-Requisites .....	3
Additional Information .....	3
Assessment .....	3
Hardware Requirements .....	4
Software Requirements .....	4
Books and Materials .....	4
Optional Additional Texts .....	5
Course Detail .....	5
Web Component (WC) .....	6
Component Overviews:	
1. Electronic Musical Instruments .....	7
2. Music Notation Software .....	8
3. Music Production including MIDI Sequencing and Digital Audio .....	9
4. Technology-Assisted Learning Software (CAI) .....	10
5. Multimedia and Digitized Media .....	11
6. Information Processing, Computer Systems, and Lab Management .....	12
TI:ME 2C Final Project Information .....	14
<b>Student Workbook</b> .....	15
1. Electronic Musical Instruments .....	16
Review Materials .....	18
2. Music Notation Software .....	21
Review Materials .....	23
3. Music Production including MIDI Sequencing and Digital Audio .....	26
Review Materials .....	28
4. Technology-Assisted Learning Software (CAI) .....	31
Review Materials .....	33
5. Multimedia and Digitized Media .....	36
Review Materials .....	38
6. Information Processing, Computer Systems and Lab Management .....	41
Review Materials .....	43
Final Project Form .....	46
<b>Course Appendices</b>	
A. National Standards for Music Education .....	47
B. National & State Standards Correlation Document .....	48
C. TI:ME Technology Areas .....	50
D. InTasc Core Teaching Standards .....	51
E. Framework for 21 <sup>st</sup> Century Learning .....	53
F. Select Web Resources .....	54
G. Lesson Plan Template .....	58
H. Final Project Form .....	59
I. TI:ME Specific Resources .....	60

# Syllabus

## **DESCRIPTION:**

Students will use knowledge acquired from the Technology Institute for Music Educators (TI:ME) level one and level two courses (or equivalents) and integrate it with the creation of standards-based lesson plans. Each lesson plan created will pertain to one of the technology competency areas as specified by TI:ME and should be appropriate for use in the participants' courses or other music-related curricula.

## **PRE-REQUISITES:**

Participants taking this course must already be familiar with *TI:ME technology areas of competency in Music Technology* and should have already completed the TI:ME Level one certification (or have equivalent experiences). While some of the technologies used as the focus of the lesson plans may be lightly reviewed or new techniques may be discussed, this course is NOT designed to teach the tools and skill-sets that will be contained within each of the developed lesson plans.

## **ADDITIONAL INFORMATION:**

Participants are strongly encouraged to have copies of their existing teaching assignments so that the instructor may better guide them with the creation of lesson plans appropriate for their particular needs.

Depending upon the institution offering this course, it may be offered for varying amounts of credit. Because of the demanding nature of the TI:ME 2C course, courses are generally limited to a maximum of sixteen students. It is not uncommon in this course for participants to have large time segments where they will be working alone, at their workstations/computers, to complete the tasks and projects assigned as part of this course. All TI:ME instructors are approved by TI:ME and experienced with the instruction of technology to in-service teachers.

## **ASSESSMENT:**

Each instructor will assess students differently as required by the institution offering the course. Regardless, assessment considerations will include the quality and completeness of each lesson plan and all assigned work, class participation, and the quality and presentation of the final project.

*This course fulfills 1/3 of the requirements for the TI:ME Level Two Certification.*

### **HARDWARE REQUIREMENTS:**

If the course is taught in a music rich computer lab, there will be multiple workstations available to complete the tasks assigned in the course. Workstations will include various MIDI, audio, and music related hardware as well as broadband access to the Internet.

If the course is taught via an online environment, the student will be required to have a “modern computer system” capable of running current software products. Reliable broadband access to the Internet, as well as an updated and current Internet browser is required. A MIDI controller connected to each participant’s computer is highly recommended. All of the computer’s hardware devices should be updated to their current driver versions. Each instructor will have various hardware requirements for the course and all participants are encouraged to ensure that they have met all of the requirements prior to the start of the course.

### **SOFTWARE REQUIREMENTS:**

Software representative of each of the technology areas will be made available to the students. TI:ME 2C courses taught in a traditional lab setting will have all of the software installed prior to the start of the course.

Courses taught online will have various software requirements and each participant will be expected to have appropriate software available for each of the technology areas used with the lesson plans that they will be developing. Various commercial, freeware, and open-source software may be used to accomplish the tasks within the course. Each instructor will provide a list of acceptable software available for these tasks prior to the onset of the course. *Course Appendix F* contains a number of suggested software programs that may be used as part of this course.

### **BOOKS AND MATERIALS:**

TI:ME 2C specific materials (provided by the instructor):

- TI:ME 2C Syllabus
- TI:ME 2C Student Workbook
- TI:ME 2C Appendices

Recommended text: *Technology Strategies for Music Education* by Rudolph, Richmond, Mash, & Webster. TI:ME Publications, 2005. (ISBN: 0634090607)

**Optional Additional Texts:**

Alfred Publishing Staff. (2009) *Integrating Technology with Music Instruction: Using standard technology teaching tools to aid student learning and teach essential music skills*. Alfred Publishing. (ISBN: 0739054996)

Burns, Amy. (2009) *Technology Integration in the Elementary Music Classroom*. Hal Leonard. (ISBN: 9781423427575)

Frankel, James. (2009) *The Teacher's Guide to Music, Media, and Copyright*. Hal Leonard. (ISBN: 9781423443445)

Frankel, James and Rudolph Thomas E. (2009) *YouTube in Music Education*. Hal Leonard. (ISBN: 1423479386)

Rudolph, Thomas E. (2005) *Teaching Music with Technology, 2<sup>nd</sup> edition*. GIA Publications, Inc. (ISBN: 1592009816)

Williams, David and Webster, Peter. (2008) *Experiencing Music Technology 3<sup>rd</sup> edition*. Schirmer Books. (ISBN: 9780495565543)

**COURSE DETAIL:**

This course is focused around each participant developing relevant lesson plans and assessment criteria for each of the six areas of technology as defined by TI:ME in the text, *Technology Strategies for Music Education*. Each instructor is required to cover all of the six areas in this course, but the amount of time spent in the course on each area will vary.

The six technology competency areas are:

1. Music Notation Software
2. Electronic Musical Instruments
3. Music Production including MIDI Sequencing and Digital Audio
4. Computer-Assisted Instruction
5. Multimedia and Digitized Media
6. Information Processing, Computer Systems, Lab Management

Instruction in each of the areas may not happen sequentially and will vary among instructors.

### **Web Component (WC)**

The instructor may choose to teach this course in a traditional or online environment utilizing website software to create a course webpage containing additional materials and information for use by the class participants. In addition, participants may be required to create websites utilizing software such as WordPress (<http://wordpress.com>) or Blogger (<http://blogger.com>) as an adjunct in creating a technologically-enhanced learning environment for the course.

If the instructor uses the WC, additional time will be allocated to ensuring that the participants are versed in using the software selected. The WC component will allow students to share, communicate, and navigate each other's materials more easily.

### **Electronic Musical Instruments ~ Course Section Overview:**

Each of the participants will demonstrate a proficient level of knowledge with regard to *Electronic Musical Instruments* (EMI) by developing one or two course-appropriate lesson plans that will provide an enhanced learning model for their targeted program(s). Each lesson plan should demonstrate a level of mastery with regard to the following competency area topics:

1. The history and development of *Electronic Musical Instruments* and the usage of Music Instrument Digital Interface (MIDI) with regard to music and music education
2. Types and categories of EMIs and related devices (both MIDI and non-MIDI)
  - a. Electronic music keyboards, digital pianos, and synthesizers
  - b. MIDI controllers, audio devices, and sound modules
    - i. Electronic Wind Instruments (EWIs), Electronic Valve Instruments (EVIs), stringed controllers, pitch to MIDI devices, sampling devices, small device audio controllers (iPad, iPhone, Android, etc.), percussion-related devices, etc.
  - c. Audio processing gear, audio mixing gear, sound reinforcement gear, etc.
3. Current and relevant EMI and related EMI devices based on the items in number two above for the pre-elementary, primary, and secondary music classrooms.
4. The current MIDI standards and related specifications and their relevance with regard to the mastery of the competency standard:
  - a. General MIDI (GM)
  - b. General MIDI 2
  - c. MIDI Lite
  - d. Supersets of GM: XG and GS
5. Finding, implementing, and arranging available ensembles scores and method books for use with an EMI or mixed EMI ensemble or group.
6. EMI performance techniques as they relate to students performing on EMI devices and considerations of teaching techniques for teachers with little-to-no piano skills
7. Creating music, music examples, or resources for distribution via traditional or online media sources
8. Budget considerations for implementing and maintaining EMI devices as assistive learning tools or as ensembles or parts of an ensemble

9. Developing solid criteria for evaluating and assessing the progress of the students for whom the lesson plan is written

*Instructors may also include a number of content reinforcement activities for students to complete that are related to each topic. In addition, all participants will be required to present at least one of the lesson plans to the instructor and classmates as part of this course.*

### **Music Notation Software ~ Course Section Overview:**

Each of the participants will demonstrate a proficient level of knowledge about *Music Notation* software by developing one or two course appropriate lesson plans that will provide an enhanced learning model for their targeted program(s).

Each lesson plan should demonstrate a level of mastery with regard to the following competency area topics:

1. Related definitions associated with *Music Notation* software
2. An understanding of the mainstream notation software programs: *Finale*, *Sibelius*, *MuseScore*, *Noteflight*, etc.
3. Software that allows for the creation of *Music Notation*:
  - a. *Music Notation* software
  - b. Sequencing software with notation capabilities
  - c. Early childhood software or CAI software with notation capabilities
  - d. Other MIDI devices/software with notation capabilities
4. Copyright law as it pertains to *Music Notation* software and usage
5. Advanced features of notation software such as video integration, music theory/composition tools, scanning of music, etc.
6. Importing MIDI files through the notation software
7. Exporting created notation for use in word processing software or used online with websites or *PowerPoint*-style presenting software
8. Exporting notation in both MIDI and XML formats for use with other notation programs or embedding in various online formats
9. Creating audio files (MP3, WAV, etc.) directly from notation software for use with various online sources and/or local software uses
10. Creating short notation examples for use in student hand-outs or demonstrative purposes including using built-in options and screen-capture software for creating images of the notation
11. Printing completed notation as a score, in parts, or as a file format such as PDF
12. Budget considerations for implementing and maintaining *Music Notation* in a classroom environment – site licenses, lab-packs, concurrent licensing, other related needs



13. Developing solid criteria for evaluating and assessing the progress of the students for whom the lesson plan is written

*Instructors may also include a number of content reinforcement activities for students to complete that are related to each topic. In addition, all participants will be required to present at least one of the lesson plans to the instructor and classmates as part of this course.*

### **Music Production including MIDI Sequencing and Digital Audio ~ Course Section Overview:**

Each of the participants will demonstrate a proficient level of knowledge with regard to *Music Production* software by developing one or two course appropriate lesson plans that will provide an enhanced learning model for their targeted program(s).

Each lesson plan should demonstrate a level of mastery with regard to the following competency area topics:

1. Related *Music Production* software definitions
2. The various types of software that are used in music production:
  - a. MIDI and audio players, both simple and complex
  - b. *Music Production* software based upon sequencing - simple and complex, local and/or Web-based
  - c. Digital audio production software, simple and complex, local and/or Web-based
  - d. Production software that integrates audio production and video production elements and design – local and/or Web-based
  - e. Loop-based software such as *Garage Band*, *MixCraft*, *Aviary Myna*, etc. – local and/or Web-based
3. Various advanced features of the *Music Production* related software programs
4. The creation of music or music examples to be used as accompaniments or in combination with rich-media or rich-media Web-based items
5. An understanding of the various audio formats (and qualities) and their usage: AAC, MID, MP3, MP4, WAV, etc.
6. Exporting created audio file formats to other digital audio forms
7. Exporting MIDI creations to standard MIDI files or XML files for use with other MIDI-enabled products
8. Configuring MIDI devices for use as an audio input device with the *Music Production* software

9. Importing and transcoding audio to various audio formats that are necessary for different tasks
10. Sharing of digital audio through Web 2.0 applications such as *Soundcloud*, *Cinch*, etc.
11. Copyright law as it pertains to *Music Production* and digital audio
12. Budget considerations for implementing and maintaining *Music Production* software in a classroom environment – site licenses, lab-packs, concurrent licensing, other related needs
13. Developing solid criteria for evaluating and assessing the progress of the students for whom the lesson plan is written

*Instructors may also include a number of content reinforcement activities for students to complete that are related to each topic. In addition, all participants will be required to present at least one of the lesson plans to the instructor and classmates as part of this course.*

**Technology-Assisted Learning Software (Computer-Assisted Instruction CAI) ~ Course Section Overview:**

Each of the participants will demonstrate a proficient level of knowledge with regard to *Computer Assisted Learning Software* by developing one or two course appropriate lesson plans that will provide an enhanced learning model for their targeted program(s).

Each lesson plan should demonstrate a level of mastery with regard to the following competency area topics:

1. Related technology-assisted learning definitions
2. Key characteristics and functions of the various types of Web-based and local CAI software:
  - a. CAI-style games
  - b. Drill and practice
  - c. Tutorials
  - d. Computer assisted assessment
  - e. BLU-RAY/DVD/CD/other forms of multimedia
  - f. Wiki-style websites, relevant blogs, community learning pages, and personal learning environments (PLEs)
3. Creation of web-based and local resources for students revolving around classroom topics
4. Choosing CAI programs that properly enhance the learning of the students when added to traditional teaching methods and existing lesson plans
5. Budget considerations for implementing and maintaining music production software in a classroom environment – site licenses, lab-packs, concurrent licensing, other related needs
6. Developing solid criteria for evaluating and assessing the progress of the students for whom the lesson plan is written

*Instructors may also include a number of content reinforcement activities for students to complete that are related to each topic. In addition, all participants will be required to present at least one of the lesson plans to the instructor and classmates as part of this course.*

### **Multimedia and Digitized Media ~ Course Section Overview:**

Each of the participants will demonstrate a proficient level of knowledge with regard to *Multimedia and Digitized Media (Digital Media)* by developing one or two course appropriate lesson plans that will provide an enhanced learning model for their targeted program(s).

Each lesson plan should demonstrate a level of mastery with regard to the following competency area topics:

1. Related multimedia and *Digital Media* definitions
2. The various forms of *Digital Media*:
  - a. Audio
  - b. Graphics
  - c. MIDI
  - d. Text
  - e. Video
3. The various types of multimedia authoring software, both web-based and locally stored
4. Methods by which the various forms of *Digital Media* are manipulated
5. Methods by which the various forms of *Digital Media* are stored or transferred
6. Embedding of *Digital Media* in traditional forms such as word processing and presentation software
7. Embedding of *Digital Media* in websites and online resources
8. Using *Digital Media* in Web 2.0 style websites, social media, and online resources

9. The creation and storage of *Digital Media* via various mechanisms – hardware and software based
10. Conversion and transcoding of one similar digital form to another (i.e. .MP3 to .WAV; .MOV to .AVI, etc.)
11. The ability to create a media rich website, blog, wiki, or online resource complete with *Digital Media* resources
12. Copyright law as it pertains to *Digital Media* usage
13. Budget considerations for implementing and maintaining *Digital Media* related hardware, software, and peripherals
14. Developing solid criteria for evaluating and assessing the progress of the students for whom the lesson plan is written

*Instructors may also include a number of content reinforcement activities for students to complete that are related to each topic. In addition, all participants will be required to present at least one of the lesson plans to the instructor and classmates as part of this course.*

### **Information Processing, Computer Systems, and Lab Management ~ Course Section Overview:**

Each of the participants will demonstrate a proficient level of knowledge with regard to *Information Processing, Computer Systems, and Lab Management* by developing one or two course appropriate lesson plans that will provide an enhanced learning model for their targeted program(s).

Each lesson plan should demonstrate a level of mastery with regard to the following competency area topics:

1. Related *Information Processing, Computer Systems, and Lab Management* definitions
2. Computer operating systems and their differences and similarities:
  - a. *Mac*
  - b. *Windows*
  - c. *Linux*
  - d. Mobile platforms such as *iPad, iPhone, Android, etc.*
3. Software related music education tools:
  - a. Word processing, spreadsheet, productivity-related
  - b. Desktop and online publishing tools
  - c. The various forms of authoring software
  - d. Administration software (grading, managing, etc.)
  - e. Presentation software such as *PowerPoint* or *Prezi*

- f. Marching band drill design and other niche software programs
  - g. Various forms of online communication, website development, and social media
  - h. Troubleshooting skills
4. Hardware-related music education and lab/workstation needs:
    - a. Computer specifications
    - b. Network specifications and needs (WAN, LAN, WI-FI, proxy, etc.)
    - c. Computer components (monitor, hard drive, MIDI devices, etc.)
    - d. Computer installation, setup, and care
    - e. System software installation, setup, and care
    - f. Computer security, anti-virus, anti-malware, anti-spyware protection
    - g. Interconnectivity of music keyboards and communication needs of a piano/keyboard lab
    - h. Teacher workstation needs, LCD projectors, interactive whiteboards (SMART, Promethean, etc.)
    - i. Classroom audio and sound reinforcement systems
    - j. Computer system backup and protection
    - k. Troubleshooting skills
  5. Classroom lab types:
    - a. Keyboard/piano lab
    - b. Keyboard/piano lab with desktop/laptop and MIDI
    - c. Digital Audio Workstation (DAW) lab
    - d. Ad-hoc music computer labs utilizing desktops or laptops with Internet access without MIDI devices
    - e. Ad-hoc music computer labs utilizing desktops or laptops with Internet access and portable MIDI devices
    - f. Mobile-based electronic lab resources for teachers without a permanent classroom
    - g. Resources for help with designing a lab “in house” or finding qualified music education, lab-specific companies
  6. Budget considerations for implementing and maintaining a music education based computer lab
  7. Music and Arts related organizations that help with grant funding and grant writing for music technology needs
  8. Online resources for help, support, and discussing the needs associated with the running of music education based computer lab environment
  9. Developing solid criteria for evaluating and assessing the progress of the students for whom the lesson plan is written

*Instructors may also include a number of content reinforcement activities for students to complete that are related to each topic. In addition, all participants will be required to present at least one of the lesson plans to the instructor and classmates as part of this course.*

**TI:ME 2C Final Project:**

During the last day of the course, each participant will select at least one of their lesson plans to present to all of those enrolled in the course.

1. Depending upon each course situation, the lesson may be taught to the entire class or in smaller groups.
2. The lesson plan being taught will be made available to all of the participants either online or directly.
3. If desired, one or more of the course participants may “act” the role of the age-group of those to whom the lesson plan is being taught, this is especially useful if the lesson plan focuses on computer aided instruction (CAI) of any type.
4. Each of the students enrolled in the course will provide written reactions to the author of the lesson plan being observed and taught, either online as comments to written lesson plan or on the included paper form.
5. Demonstration of the lesson plan should not exceed 30 minutes including the time to discuss the lesson plan among the other participants and with the instructor.

Each instructor will decide whether or not peer feedback and reviews will count toward the participants’ overall grade in the course.

*At the end of the course, participants will be required to input all of their lesson plans into the TI:ME database for other TI:ME members to benefit from.*



## Technology Institute for Music Educators

### **Integrating Technology into the Music Curriculum (TI:ME 2C)**

This course is required for TI:ME Level Two certification  
For more information on TI:ME Level One and Level Two certifications, please visit the  
TI:ME web page (<http://ti-me.org>)

# Student Workbook

Joseph M. Pisano, Ph.D.  
Edited by Jay Dorfman, Ph.D.

*This course was made possible by a grant from SoundTree*

Last revision: July, 2011

Copyright © 1999, 2003, 2005, 2011 ~ The Technology Institute for Music Educators





## Part 1: Electronic Musical Instruments

**Topic Brief:** *Electronic Musical Instruments (EMI)* most often refer to keyboard or string devices such as guitars, and may also refer to any type of Music Instrument Digital Interface (MIDI) device. Today, the term may also refer to computer audio generating devices such as EMI-based software from an iPad or mobile computing device.

The instructor will present a brief review of the basic concepts of the TI:ME Technology Area: *Electronic Music Instruments*. Concepts reviewed in this section will be related to the TI:ME pre-requisite courses 1A -*Basic Skills in Music Technology: Electronic Keyboards, MIDI Sequencing, and Notation* and 1B - *Basic Skills in Music Technology: Instructional Software, Communications, and Digital Media*.

The review component of this course will include completing the related worksheet and either posting it as part of the website component (WC) or as an e-mail, or paper assignment. As this is a review of previously acquired knowledge and skills, not every related topic will be discussed in detail; however, time will be allocated to discuss any questions or uncertainties that may arise. The instructor may opt to have the participants attempt the review worksheet first and then proceed with the review process. In addition, the instructor may also choose to include a number of additional topic related activities as part of the review process.

The major part of this component will consist of developing an appropriate, well thought-out lesson plan related to the topic *Electronic Musical Instruments*. Each lesson should reflect the participants' understanding of the related music education topics and show the related technologies seamlessly blended into the framework. Each lesson plan will be posted as part of the WC or made available to the instructor and the other participants for review, discussion, and commentary.

*Please note that each of the participants will be presenting at least one of their lesson plans to the entirety of the class as part of the course requirements.*

### **Select Topics for Review:**

1. Related EMI terminology
2. History of EMI
3. Electronic instruments vs. electric instruments
4. Music Instrument Digital Interface (MIDI) – What it is...
  - a. USB MIDI vs. other MIDI-style connections
  - b. GENERAL MIDI and other MIDI specifications
  - c. MIDI as a controller for other non-music devices
5. Types of EMI solutions that are available for the music classroom
  - a. Electronic piano keyboard/synthesizer labs
  - b. Digital Audio Workstations (DAW)
  - c. EMI devices used in conjunction with software
  - d. EMI-based groups, and performance ensembles (including “non-traditional” electronic performance ensembles such as the iPad or other mobile-style devices)
  - e. EMI-based computer hybrid labs of any kind
6. Manufacturers of EMI
7. Methods and educational materials related for EMI
8. Internet-based resources for finding EMI related information

### **Lesson Plan Detail:**

Create a detailed lesson plan that is appropriate for use in any music education class that integrates concepts from the TI:ME technology standard: **Electronic Music Instruments**. This lesson plan may be completed using the WC or completed [and submitted locally](#).

Each lesson plan must include all of the elements in the associated lesson plan template for use with this course and will be assessed with the following criteria:

- Completeness and adherence to the lesson plan template
- Demonstrated knowledge and applicability of the technology standard as integrated into the lesson plan
- Appropriate usage of technology for use in the music classroom and with the targeted music education topic(s)

**Note:** Each lesson plan will be converted into a PDF and also transferred to the TI:ME website at the end of the course.

### **Electronic Music Instrument Review Worksheet:**

*(Also available to utilize as part of the WC)*

**Instructions:** Please be verbose with regard to answering each question. Use bullet points and link to related Internet addresses where appropriate as part of the discussion for each question.

1. Briefly explain the difference between electric music instruments and electronic music instruments.
2. What is Musical Instrument Digital Interface (MIDI)? Identify pertinent aspects of the General MIDI standard.
3. Describe the difference between an electric piano or keyboard device and keyboards that are designated as “synthesizers”.
4. What is a MIDI controller and what are the different types are available to musicians?
5. Who are a few of the manufactures of current EMI products?
6. What are some of the educational resources (method materials, books, etc.) available for use with EMI?
7. What are the various computer/lab configurations for use with an EMI environment? - Name some of the EMI related companies that develop and support EMI computer/lab EMI environments?
8. What are some of the budget related questions regarding the proposal and maintenance of an EMI environment? – What/Where/Who are some of the resources that are available to help with finding information about building/creating a computer/lab environment and also finding out about potential grants or funding help?
9. What local, state, or national standards are most closely associated with the implementation of this TI:ME technology standard in a music course or class?

## Optional Review Activity: An Overview of Electronic Keyboards

(From TI:ME 1A Course, Electronic Music Instruments, UNIT 2)

<p><b>Objectives:</b> Upon completion you will be able to:</p>	<ul style="list-style-type: none"> <li>• Describe the different types of electronic keyboards available</li> <li>• Describe the sound production and control features available on electronic keyboards</li> <li>• Describe how to select the appropriate keyboard and feature set for specific teaching environments</li> </ul>
<p><b>Activity:</b></p>	<ul style="list-style-type: none"> <li>• The instructor will give a brief related topic demonstration</li> <li>• Participants will discuss electronic keyboard types and features appropriate for various educational settings</li> <li>• Participants will prioritize a list of keyboard types and features for their specific work environments</li> </ul>
<p><b>Activity Sheet:</b></p>	
<p>Using the numbers 1-5, prioritize the following list of electronic keyboard types in order of relevance for your teaching environment.</p> <p>_____ low-cost electronic keyboards          _____ keyboard controllers          _____ digital pianos          _____ synthesizers          _____ workstations</p> <p>Using the numbers 1-11, prioritize the following list of electronic keyboard control features in order of relevance for your teaching environment.</p> <p>_____ keyboard span          _____ key size          _____ key weight          _____ velocity sensitivity          _____ aftertouch          _____ pitch bender          _____ modulation controller          _____ sliders/knobs          _____ foot switches/foot pedals          _____ MIDI capability          _____ internal sequencer</p>	
<p><b>Notes:</b></p>	

*Depending upon course needs, the instructor may include this and/or other optional activities from the TI:ME 1A and 1B books or other resources.*

## **Lesson Plan Template**

**Title of the lesson:** \_\_\_\_\_

**This lesson plan developed by:** \_\_\_\_\_

**Target Student Level:** Kindergarten-Pre- | Elementary | Secondary | College

**Type of Class (general music, ensemble, etc.):**  
\_\_\_\_\_

**Duration of the lesson:** \_\_\_\_\_

**Description of the lesson:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Objective(s) of the lesson:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Pre-Requisite Skills required (if any):**  
\_\_\_\_\_  
\_\_\_\_\_

**Equipment/Materials required:** \_\_\_\_\_  
\_\_\_\_\_

**National/State/Local Standards Addressed:** \_\_\_\_\_  
\_\_\_\_\_

**TI:ME Technology Areas Addressed:**  
\_\_\_\_\_

**Procedures/Anticipatory Set:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Lesson Detail:

Author

Deleted:

\_\_\_\_\_  
\_\_\_\_\_  
(expand to fit lesson)

Lesson Evaluation and Assessment Rubric:

\_\_\_\_\_  
\_\_\_\_\_

Future/Related/Connected Lesson  
Plans:

\_\_\_\_\_  
\_\_\_\_\_



## Part 2: Music Notation Software

**Topic Brief:** *Music Notation software* is primarily used to notate music so that it can be edited, manipulated, printed and easily transferred to other devices.

The instructor will present a brief review of the basic concepts of the TI:ME Technology Area: *Music Notation Software*. Concepts reviewed in this section will be related to the TI:ME pre-requisite courses 1A - *Basic Skills in Music Technology: Electronic Keyboards, MIDI Sequencing, and Notation* and 1B - *Basic Skills in Music Technology: Instructional Software, Communications, and Digital Media*.

The review component of this course will include completing the related worksheet and posting it either online as part of the website component (WC) or as an e-mail, or paper assignment. As this is a review of previously acquired knowledge and skills, not every related topic will be discussed in detail; however, time will be allocated to discuss any questions or uncertainties that may arise. The instructor may opt to have the participants attempt the review worksheet first and then proceed with the review process. In addition, the instructor may also choose to include a number of additional topic related activities as part of the review process.

The major part of this component will consist of developing an appropriate, well thought-out, lesson plan related to the topic *Music Notation Software*. Each lesson should reflect

the participants' understanding of the related music education topics and show the related technologies seamlessly blended into the framework. Each lesson plan will be posted as part of the WC or made available to the instructor and the other participants for review, discussion, and commentary.

*Please note that each of the participants will be presenting at least one of their lesson plans to the entirety of the class as part of the course requirements.*

**Select Topics for Review:**

1. Related *Music Notation* terminology
2. Major manufacturers of *Music Notation* software
3. Differences and similarities between primarily *Music Notation* software and primarily *Sequencing* software
4. Music Instrument Digital Interface (MIDI) devices and *Music Notation* software
5. "Pitch to MIDI" concepts and integrations with *Music Notation software*
6. Optical Character Recognition/Scanning (OCR) in conjunction with *Music Notation Software*
7. MIDI to audio (MP3/WAV/AAC, etc.) exporting, Website/online embedding, and related conventions
8. Graphic, PDF conversion, screen capture, image manipulation, and Website/online embedding uses with *Music Notation* software
9. Collaboration and Web 2.0 conventions associated with *Music Notation* software
10. Copyright law as it pertains to *Music Notation* software
11. Methods and Internet-based resources related to *Music Notation* software

**Lesson Plan Detail:**

Create a detailed lesson plan that is appropriate for use in any music education class that integrates concepts from the TI:ME Technology Standard: **Music Notation Software**. This lesson plan may be completed using the WC or completed locally via computer.

Each lesson plan must include all of the elements in the associated lesson plan template for use with this course and will be assessed with the following criteria:

- Completeness and adherence to the lesson plan template
- Demonstrated knowledge and applicability of the technology standard as integrated into the lesson plan
- Appropriate usage of technology for use in the music classroom and with the targeted music education topic(s)

**Note:** *Each lesson plan will be converted into a PDF and also transferred to the TI:ME website at the end of the course.*

### **Music Notation Review Worksheet:**

*(Also available to utilize as part of the WC)*

**Instructions:** Please be verbose with regard to answering each question. Use bullet points and link to related Internet addresses where appropriate as part of the discussion for each question.

1. Who are some of the well-known manufacturers of *Music Notation* software and what are some of their related products?
2. Please describe some of the common practices and techniques of entering “music” into notation software?
3. How is sequencing software similar, yet different from *Music Notation* software?
4. MIDI devices are particularly useful when used in conjunction with *Music Notation* software. Why?
5. What is meant by “Pitch to MIDI” devices and why would anyone want to use this electronic convention with *Music Notation* software?
6. How does using OCR software in conjunction with *Music Notation* software make inputting both faster and easier?
7. What are a number of the ways other than “printing” that someone could utilize a product created with the *Music Notation* software?
8. What are some uses for notated scores exported as audio files?



9. What are some of the ways that a finished *Music Notation* product could be used in your daily teaching assignments?
10. What collaborative options (whether included in the software or used in conjunction with other software) are available for students to utilize with each other and with the teacher?
11. What copyright concerns and considerations must be discussed with the students in direct relationship to using and publishing any products created with *Music Notation* software?
12. What are some of the available educational resources (method materials, books, etc.) for use as adjuncts for use with *Music Notation* software?
13. What local, state, or national standards are most closely associated with the implementation of this TI:ME technology standard in a music course or class?

**Optional Review Activity: Notation Software Note Entry Exercises**

(From *TI:ME 1A Course, Notation Software, UNIT 2*)

<p><b>Objectives:</b> Upon completion you will be able to:</p>	<ul style="list-style-type: none"> <li>• Demonstrate the major methods of note entry in music notation software.</li> <li>• Demonstrate use of multiple layers (voices) on a staff</li> </ul>
<p><b>Activity:</b></p>	<ul style="list-style-type: none"> <li>• The instructor will give a brief related topic demonstration and provide music notation documents for participants to use for note entry</li> <li>• Participants will discuss electronic keyboard types and features appropriate for various educational settings</li> <li>• Participants will prioritize a list of keyboard types and features for their specific work environments.</li> </ul>
<p><b>Notation Entry Exercises:</b></p>	
<ol style="list-style-type: none"> <li>1. The Non-MIDI approach             <ol style="list-style-type: none"> <li>a. • Point and click with the mouse</li> <li>b. • Typing on an alphanumeric keyboard</li> </ol> </li> <li>2. Step-Time MIDI             <ol style="list-style-type: none"> <li>a. • One note or chord at a time without regard to actual entry tempo</li> <li>b. • Pitch on MIDI keyboard and duration on alphanumeric keyboard</li> </ol> </li> <li>3. Real-Time MIDI             <ol style="list-style-type: none"> <li>a. • WYPIWYP (What You Play Is What You Print)</li> <li>b. • Use notation software to capture musical performances</li> <li>c. • Not necessarily a keyboard (guitar, wind, and other special controllers)</li> <li>d. • Some MIDI information will be ignored (pitch bend)</li> <li>e. • Using click track from notation software</li> </ol> </li> </ol>	

- f. • Using a user defined tap tempo (beat reference)
- g. • User sets a quantization level for smallest duration the software will notate.
- 4. Transcription from a Standard MIDI File (SMF)
- 5. Techniques for erasing input errors and inserting notes and rests.
- 6. Techniques for working with multiple voices in the same staff and pertinent information such as stem direction
- 7. Select display colors for notes and score elements
- 8. Scanning music
- 9. Music XML and backward compatibility

**Notes:**

*Depending upon course needs, the instructor may include this and/or other optional activities from the TI:ME 1A and 1B books or other resources.*

## Lesson Plan Template

**Title of the lesson:** \_\_\_\_\_

**This lesson plan developed by:** \_\_\_\_\_

**Target Student Level:** Kindergarten-Pre- | Elementary | Secondary | College

**Type of Class (general music, ensemble, etc.):**  
\_\_\_\_\_

**Duration of the lesson:** \_\_\_\_\_

**Description of the lesson:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Objective(s) of the lesson:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Pre-Requisite Skills required (if any):**  
\_\_\_\_\_  
\_\_\_\_\_

Equipment/Materials required: \_\_\_\_\_

National/State/Local Standards Addressed: \_\_\_\_\_

TI:ME Technology Areas Addressed: \_\_\_\_\_

Procedures/Anticipatory Set:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Lesson Detail: \_\_\_\_\_  
\_\_\_\_\_

(expand to fit lesson)

Lesson Evaluation and Assessment Rubric:  
\_\_\_\_\_  
\_\_\_\_\_

Future/Related/Connected Lesson Plans: \_\_\_\_\_  
\_\_\_\_\_



## Part 3: Music Production including MIDI Sequencing and Digital Audio

**Topic Brief:** *Music Production* software is primarily used to record, edit, manipulate, and produce finished audio and/or video products. Sequencing software may be thought of as organizing MIDI (Music Instrument Digital Interface) data in a particular order and also as a MIDI “multi-track” recorder.

The review component of this course will include completing the related worksheet and posting it either online as part of the website component (WC) or as an e-mail, or paper assignment. As this is a review of previously acquired knowledge and skills, not every related topic will be discussed in detail; however, time will be allocated to discuss any questions or uncertainties that may arise. The instructor may opt to have the participants attempt the review worksheet first and then proceed with the review process. In addition, the instructor may also choose to include a number of additional topic related activities as part of the review process.

The major part of this component will consist of developing an appropriate, well thought-out, lesson plan related to the topic *Music Production including MIDI Sequencing and Digital Audio*. Each lesson should reflect the participants' understanding of the related music education topics and show the related technologies seamlessly blended into the framework. Each lesson plan will be posted as part of the WC or made available to the instructor and the other participants for review, discussion, and commentary.

*Please note that each of the participants will be presenting at least one of their lesson plans to the entirety of the class as part of the course requirements.*

**Select Topics for Review:**

1. Related *Music Production, MIDI sequencing and Digital Audio (Music Production)* terminology
2. Major manufacturers of *Music Production* software/hardware
3. What are the main formats of digital audio files?
4. What is sequencing?
5. Describe common outboard audio gear that would be expected in a studio or live audio reinforcement setup
6. What are Digital Audio Workstations (DAWs)?
7. What are the major forms of DAW plugin technology? How do they differ?
8. Looping and creative composition software that have audio components
9. Techniques for recording audio and processing audio
10. Audio distribution channels and mass-production
11. Collaboration and Web 2.0 conventions associated with *Music Production* topics
12. Copyright law as it pertains to *Music Production*

13. Methods, educational materials, and Internet-based resources related to *Music Production*

**Lesson Plan Detail:**

Create a detailed lesson plan that is appropriate for use in any music education class that integrates concepts from the TI:ME Technology Standard **Music Production including MIDI Sequencing and Digital Audio**. This lesson plan may be completed using the WC or completed locally via computer.

Each lesson plan must include all of the elements in the associated lesson plan template for use with this course and will be assessed with the following criteria:

- Completeness and adherence to the lesson plan template
- Demonstrated knowledge and applicability of the technology standard as integrated into the lesson plan
- Appropriate usage of technology for use in the music classroom and with the targeted music education topic(s) of the lesson plan

**Note:** *Each lesson plan will be converted into a PDF and also transferred to the TI:ME website at the end of the course.*

**Music Production Review Worksheet:**

*(Also available to utilize as part of the WC)*

**Instructions:** Please be verbose with regard to answering each question. Use bullet points and link to related Internet addresses where appropriate as part of the discussion for each question.

1. Who are some of the major manufacturers of *Music Production* software?
2. What are the differences among sequencing, multi-tracking audio, and simple digital audio two-track editing?
3. Explain the differences between compressed (lossy) audio and non-compressed (non-lossy) audio file formats?
4. What are sample rate and bit depth? What are typical measurements for these characteristics of audio? How do they impact sound quality and file sizes?

5. What does a typical DAW setup look up in a school environment? - in a studio environment?
6. What is VST technology as it relates to audio software? What are some similar technologies?
7. How is loop-based audio creation/editing different from traditional recording methods of creating/editing digital audio?
8. Describe the role that having high-quality audio equipment (microphones, pre-amps, mixing-consoles, etc.) can have on the quality of an audio recording.
9. Discuss the role that proper microphone selection and placement can have on the quality of an audio recording.
10. Describe a typical audio signal-flow path in a DAW system or simple two-track recording setup.
11. What Web 2.0 websites allow the sharing/collaboration of digital audio products?
12. What Internet-based solutions are available for storing digital audio files, editing digital audio files, and distributing digital audio files?
13. What copyright concerns must be considered anytime a non-original audio product is recorded and distributed in any way?
14. What local, state or national standards are most associated with the implementation of this TI:ME technology standard in a music course or class?

**Optional Review Activity: Using loop-based audio editing software**

*From TI:ME 1A Course, Music Production Software, UNIT 2)*

<p><b>Objectives:</b> Upon completion you will be able to:</p>	<ul style="list-style-type: none"> <li>• Understand the concept of loops and their uses in music production software</li> <li>• Effectively browse and select loops</li> <li>• Insert loops into a song's arrange window</li> <li>• Edit loops</li> </ul>
<p><b>Activity:</b></p>	<ul style="list-style-type: none"> <li>• The instructor will give a brief related topic demonstration and provide access to a selection of loops for use with the chosen production software</li> <li>• Participants will use loops to create a short (approx. 16 bars) musical phrase based upon a "popular" or "commercial" style (i.e. rock, country, techno, latin, etc.)</li> </ul>
<p><b>Loop-based Exercises/Topics:</b></p>	

1. Create a new file from templates or blank documents
2. Demonstrate browsing or searching for loops within the program
3. Import additional loops into the music production program
4. Place external audio and/or MIDI loops into a song's arrangement environment
5. Adjust loop playback speed, length and pitch
6. Adjust audio effects such as pan, reverb, volume, etc.
7. Demonstrate playback features using the transport mechanism
8. Export audio files from the program into other programs and formats

**Notes:**

*Depending upon course needs, the instructor may include this and/or other optional activities from the TI:ME 1A and 1B books or other resources.*

## **Lesson Plan Template**

**Title of the lesson:** \_\_\_\_\_

**This lesson plan developed by:** \_\_\_\_\_

**Target Student Level:** Kindergarten-Pre- | Elementary | Secondary | College

**Type of Class (general music, ensemble, etc.):**  
\_\_\_\_\_

**Duration of the lesson:** \_\_\_\_\_

**Description of the lesson:** \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

**Objective(s) of the lesson:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Pre-Requisite Skills required (if any):**

\_\_\_\_\_

\_\_\_\_\_

**Equipment/Materials required:** \_\_\_\_\_

\_\_\_\_\_

**National/State/Local Standards Addressed:** \_\_\_\_\_

\_\_\_\_\_

**TI:ME Technology Areas Addressed:**

\_\_\_\_\_

**Procedures/Anticipatory Set:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Lesson Detail:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*(expand to fit lesson)*

**Lesson Evaluation and Assessment Rubric:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Future/Related/Connected Lesson Plans:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_





## Part 4: Technology Assisted Learning Software

**Topic Brief:** Technology Assisted Learning Software, also known by other names such as *Computer-Assisted Instruction (CAI)* is used for one-on-one or group-based instruction as an adjunct to traditional teacher led teaching methods. “E-learning” is another related term that is related to CAI and also encompasses “Web-based” and Internet-based technologies.

The instructor will present a brief review of the basic concepts of the TI:ME Technology Area: *Technology Assisted Learning Software (CAI)*. Concepts reviewed in this section will be related to the TI:ME pre-requisite courses 1A -*Basic Skills in Music Technology: Electronic Keyboards, MIDI Sequencing, and Notation* and 1B - *Basic Skills in Music Technology: Instructional Software, Communications, and Digital Media*.

The review component of this course will include completing the related worksheet and posting it either online as part of the website component (WC) or as an e-mail, or paper assignment. As this is a review of previously acquired knowledge and skills, not every related topic will be discussed in detail; however, time will be allocated to discuss any questions or uncertainties that may arise. The instructor may opt to have the participants attempt the review worksheet first and then proceed with the review process. In addition, the instructor may also choose to include a number of additional topic related activities as part of the review process.

The major part of this component will consist of developing an appropriate, well thought-out, lesson plan related to the topic *Technology Assisted Learning Software (CAI)*. Each lesson should reflect the participants’ understanding of the related music education topics and show the related technologies seamlessly blended into the framework. Each lesson plan will be posted as part of the WC or made available to the instructor and the other participants for review, discussion, and commentary.

*Please note that each of the participants will be presenting at least one of their lesson plans to the entirety of the class as part of the course requirements.*

### **Select Topics for Review:**

1. Related *CAI* and *E-learning terminology*

2. Major manufacturers *CAI* and *E-learning* software/hardware
3. Key characteristics of useful and productive *CAI* and *E-learning* software
4. Examples of *CAI* and *E-learning* types:
  - a. Discovery
  - b. Drill and practice
  - c. Games
  - d. Problem Solving
  - e. Simulation
  - f. Tutorial
  - g. Other
5. Collaboration and Web 2.0 conventions associated with *CAI* and *E-learning* topics
6. Copyright law as it pertains to *CAI* and *E-learning*
7. Methods, educational materials, and Internet-based resources related to *CAI* and *E-learning*

#### **Lesson Plan Detail:**

Create a detailed lesson plan that is appropriate for use in any music education class that integrates concepts from the TI:ME Technology Standard: **Technology Assisted Learning Software (CAI)**. This lesson plan may be completed using the WC or completed locally via computer.

Each lesson plan must include all of the elements in the associated lesson plan template for use with this course and will be assessed with the following criteria:

- Completeness and adherence to the lesson plan template
- Demonstrated knowledge and applicability of the technology standard as     integrated into the lesson plan
- Appropriate usage of technology for use in the music classroom and with the     targeted music education topic(s) of the lesson plan

**Note:** *Each lesson plan will be converted into a PDF and also transferred to the TI:ME website at the end of the course.*

#### **Technology Assisted Learning Software Review Worksheet:**

*(Also available to utilize as part of the WC)*

Author

Deleted: -

... [1]

**Instructions:** Please be verbose with regard to answering each question. Use bullet points and link to related Internet addresses where appropriate as part of the discussion for each question.

1. Who are some of the major developers of *CAI* and *E-Learning* software?
2. Many acronyms have become associated with *CAI* (CBE, CAL, etc.). What are a few of them and their associated meanings?
3. What are some of the key characteristics of “good” *CAI* and *E-Learning* software?
4. Name and discuss some of the *CAI* and *E-Learning* software appropriate for the following:
  - a. Kindergarten and Pre-K
  - b. Elementary
  - c. Middle and Junior High School
  - d. High School
  - e. College and Adults
5. What other, non-specific *CAI*, software can be used to create *CAI* and *E-Learning* style opportunities for students?
6. What Web- based software can be used to create *CAI* and *E-Learning* opportunities for students?
7. What are some of the advantages of using *CAI* and *E-Learning* software?
8. What are some of the disadvantages of using *CAI* and *E-Learning* software?
9. What Web 2.0 Websites allow students to create and share *CAI* and *E-Learning-style* information?
10. What copyright concerns must be considered when creating or using *CAI* and *E-Learning* software while online?
11. What type of hardware and/or class environment is needed to make effective use of *CAI* and *E-Learning-style* software for enhanced music learning?
12. What local, state or national standards are most associated with the implementation of this TI:ME technology standard in a music course or class?

**Optional Review Activity: Evaluate Technology Assisted Learning Software**

(From *TI:ME 1B Course, Website Evaluation , Class Activity 1.1*)

<b>Objectives:</b> Upon completion you be able to:	<ul style="list-style-type: none"> <li>• Discuss the various types of Technology Assisted Learning Software and their application</li> <li>• Properly categorize each type of software into their appropriate areas</li> </ul>
<b>Activity:</b>	<ul style="list-style-type: none"> <li>• The instructor will give a brief related topic demonstration</li> <li>• For each category of software circle the phrase or term which most applies. Rank in priority order the terms if more than one applies. 1 = most common or greatest priority.</li> </ul>

**Activity Worksheet:**

**DRILL AND PRACTICE SOFTWARE**

KNOWLEDGE:	Teaches New Knowledge	Reinforces Existing Knowledge	
PREREQUISITE LEARNING:	Yes	No	
STRUCTURE:	Structured	Random	Student Controlled
RECORD KEEPING/SCORING:	Yes	No	
UNIQUE FEATURES			

**TUTORIAL**

KNOWLEDGE:	Teaches New Knowledge	Reinforces Existing Knowledge	
PREREQUISITE LEARNING:	Yes	No	
STRUCTURE:	Structured	Random	Student Controlled
RECORD KEEPING/SCORING:	Yes	No	
UNIQUE FEATURES			

**GAMES**

KNOWLEDGE:	Teaches New Knowledge	Reinforces Existing Knowledge	
PREREQUISITE LEARNING:	Yes	No	
STRUCTURE:	Structured	Random	Student Controlled
RECORD KEEPING/SCORING:	Yes	No	
UNIQUE FEATURES			

**DISCOVERY/SIMULATION**

KNOWLEDGE:	Teaches New Knowledge	Reinforces Existing Knowledge	
PREREQUISITE LEARNING:	Yes	No	
STRUCTURE:	Structured	Random	Student Controlled
RECORD KEEPING/SCORING:	Yes	No	
UNIQUE FEATURES			

**Notes:**

*Depending upon course needs, the instructor may include this and/or other optional activities from the TI:ME 1A and 1B books or other resources.*

**Lesson Plan Template**

Author \_\_\_\_\_  
Deleted: -

**Title of the lesson:** \_\_\_\_\_

**This lesson plan developed by:** \_\_\_\_\_

**Target Student Level:** Kindergarten-Pre- | Elementary | Secondary | College

**Type of Class (general music, ensemble, etc.):**  
\_\_\_\_\_

**Duration of the lesson:** \_\_\_\_\_

**Description of the lesson:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Objective(s) of the lesson:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Pre-Requisite Skills required (if any):**  
\_\_\_\_\_  
\_\_\_\_\_

**Equipment/Materials required:** \_\_\_\_\_  
\_\_\_\_\_

**National/State/Local Standards Addressed:** \_\_\_\_\_  
\_\_\_\_\_

**TI:ME Technology Areas Addressed:**  
\_\_\_\_\_

**Procedures/Anticipatory Set:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Lesson Detail:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(expand to fit lesson)*

**Lesson Evaluation and Assessment Rubric:**  
\_\_\_\_\_

Author  
Deleted: -

---

Future/Related/Connected Lesson  
Plans: \_\_\_\_\_

---



## Part 5: Multimedia and Digital Media

**Topic Brief:** *Multimedia and Digital Media* have become almost synonymous with each other. *Digital Media* consists of computer based formats or objects such as audio, graphics, text, and video sources. "Rich Media" is a term that is specifically used with interactive and web-based digital media components.

The instructor will present a brief review of the basic concepts of the TI:ME Technology Area: *Multimedia and Digital Media*. Concepts reviewed in this section will be related to the TI:ME pre-requisite courses 1A -*Basic Skills in Music Technology: Electronic Keyboards, MIDI Sequencing, and Notation* and 1B - *Basic Skills in Music Technology: Instructional Software, Communications, and Digital Media*.

The review component of this course will include completing the related worksheet and posting it either online as part of the website component (WC) or as an e-mail, or paper assignment. As this is a review of previously acquired knowledge and skills, not every related topic will be discussed in detail; however, time will be allocated to discuss any questions or uncertainties that may arise. The instructor may opt to have the participants attempt the review worksheet first and then proceed with the review process. In addition, the instructor may also choose to include a number of additional topic related activities as part of the review process.

The major part of this component will consist of developing an appropriate, well thought-out, lesson plan related to the topic *Multimedia and Digital Media (Digital Media)*. Each lesson should reflect the participants' understanding of the related music education topics and show the related technologies seamlessly blended into the framework. Each lesson plan will be posted as part of the WC or made available to the instructor and the other participants for review, discussion, and commentary.

Please note that each of the participants will be presenting at least one of their lesson plans to the entirety of the class as part of the course requirements.

### **Select Topics for Review:**

1. Related *Digital Media* terminology
2. Specific audio formats: AAC, FLAC, MP3, MID, WAV, etc.
3. Specific graphic formats: GIF, JPG, PNG, PSD, TIFF, etc.
4. Specific text formats: DOC, DOCX, ODT, PDF, RTF, etc.
5. Specific video formats: AVI, FLV, MOV, MP4, WMV, etc.
6. *Digital Media* quality and format conversions
7. Archive compression (ZIP, RAR, etc.), storage, and transferring of the *Digital Media* related file-types
8. Audio, graphic, text, and video tools—Commercial, freeware, online, and open-source
9. Creating traditional/physical *Digital Media* such as, CD-ROMS, DVDs, BLU-RAY, etc.
10. Embedding *Digital Media* to make media-rich website resources
11. Collaboration and Web 2.0 conventions associated with *Digital Media*
12. Copyright law as it pertains to *Digital Media*
13. Methods, educational materials, and Internet-based resources related to *Digital Media*

### **Lesson Plan Detail:**

Create a detailed lesson plan that is appropriate for use in any music education class that integrates concepts from the TI:ME Technology Standard: **Multimedia and Digital Media (Digital Media)**. This lesson plan may be completed using the WC or completed locally via computer.

Each lesson plan must include all of the elements in the associated lesson plan template for use with this course and will be assessed with the following criteria:

- Completeness and adherence to the lesson plan template

- Demonstrated knowledge and applicability of the technology standard as integrated into the lesson plan
- Appropriate usage of technology for use in the music classroom and with the targeted music education topic(s) of the lesson plan

**Note:** Each lesson plan will be converted into a PDF and also transferred to the TI:ME website at the end of the course.

### **Multimedia and Digital Media:**

*(Also available to utilize as part of the WC)*

**Instructions:** Please be verbose with regard to answering each question. Use bullet points and link to related Internet addresses where appropriate as part of the discussion for each question.

1. What is the difference between a compressed image format and a non-compressed image format? Likewise, what is the difference between a lossy file format and a non-lossy file format (audio or video)?
2. Although Music Instrument Digital Interface (MIDI) files contain a representation of music-related data, how do they differ from digital audio file formats (WAVs)?
3. What graphic file formats are most commonly found on a webpage and why?
4. What are transparent image file formats and why would one want to use them?
5. What commercial, online, and/or open-source tools are available for creating or editing audio ---video?
6. Explain why the PDF file format is an advantageous way to share finished documents.
7. Why is it necessary for musicians and educators to have a basic understanding of converting one *Digital Media* format into another?
8. Why is the “art” of creating CD-ROMs, DVDs, and other physical multimedia formats becoming less necessary to master?
9. Why would a teacher want to be able to embed a *Digital Media* product into an online resource such as a webpage?
10. The ability to rapidly share and have others access files has led to cloud-based services such as Apple’s *iCloud*, *Dropbox*, and *Flickr*. What are they and why are they important in today’s age of information exchange?



11. What Web 2.0 websites allow students to create and share *Digital Media*?
12. What copyright concerns must be considered when creating our using *Digital Media* either in traditional models or distributing it via the Internet?
13. What type of hardware and/or class environment is needed to make effective use of *Digital Media* for enhanced music learning?
14. What local, state, or national standards are most associated with the implementation of this TI:ME technology standard in a music course or class?

**Optional Review Activity: Utilize Multimedia and Digital Media Tools**

*(From TI:ME 1B Course, Multimedia Content Development , Class Lesson 3.7)*

<b>Objectives:</b> Upon completion you be able to:	<ul style="list-style-type: none"> <li>• Demonstrate proficiency in the use of still images as a multimedia component</li> </ul>
<b>Activity:</b>	<ul style="list-style-type: none"> <li>• The instructor will give a brief related topic demonstration</li> <li>• Perform various tasks utilizing the related Digital Media tools</li> </ul>
<b>Activity Suggestions:</b>	
<ul style="list-style-type: none"> <li>• Perform simple editing techniques using OS-based tools</li> <li>• Demonstrate advanced editing tools using app-based tools such as Photoshop, Fireworks, etc.</li> <li>• Work with online editing tools such as:             <ul style="list-style-type: none"> <li>○ <a href="http://www.picnik.com">www.picnik.com</a></li> <li>○ <a href="http://www.imagechef.com">www.imagechef.com</a></li> <li>○ <a href="http://www.aviary.com">www.aviary.com</a></li> </ul> </li> <li>• Create slideshows using online development tools such as:             <ul style="list-style-type: none"> <li>○ <a href="http://www.kizoa.com">www.kizoa.com</a></li> <li>○ <a href="http://www.photopeach.com">www.photopeach.com</a></li> <li>○ <a href="http://www.fliptime.com">www.fliptime.com</a></li> <li>○ <a href="http://www.vuvox.com">www.vuvox.com</a></li> </ul> </li> </ul>	
<b>Notes:</b>	

*Depending upon course needs, the instructor may include this and/or other optional activities from the TI:ME 1A and 1B books or other resources.*

## Lesson Plan Template

Title of the lesson: \_\_\_\_\_

This lesson plan developed by: \_\_\_\_\_

Target Student Level: Kindergarten-Pre- | Elementary | Secondary | College

Type of Class (general music, ensemble, etc.):  
\_\_\_\_\_

Duration of the lesson: \_\_\_\_\_

Description of the lesson: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Objective(s) of the lesson:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Pre-Requisite Skills required (if any):  
\_\_\_\_\_  
\_\_\_\_\_

Equipment/Materials required: \_\_\_\_\_  
\_\_\_\_\_

National/State/Local Standards Addressed: \_\_\_\_\_  
\_\_\_\_\_

TI:ME Technology Areas Addressed:  
\_\_\_\_\_

**Procedures/Anticipatory Set:**

---

---

---

**Lesson Detail:** \_\_\_\_\_

—

(expand to fit lesson)

**Lesson Evaluation and Assessment Rubric:**

---

---

—

**Future/Related/Connected Lesson**

**Plans:** \_\_\_\_\_

---

—



## **Part 6: Information Processing, Computer Systems, and Lab Management**

**Topic Brief:** This component consists of a variety of topics that relate to computers, operating systems, productivity software, hardware configurations, digital audio workstations, music computer lab environments.

The instructor will present a brief review of the basic concepts of the TI:ME Technology Area: *Information Processing, Computer Systems, and Lab Management*. Concepts reviewed in this section will be related to the TI:ME pre-requisite courses 1A - *Basic Skills in Music Technology: Electronic Keyboards, MIDI Sequencing, and Notation* and 1B - *Basic Skills in Music Technology: Instructional Software, Communications, and Digital Media*.

The review component of this course will include completing the related worksheet and posting it either online as part of the website component (WC) or as an e-mail, or paper assignment. As this is a review of previously acquired knowledge and skills, not every

related topic will be discussed in detail; however, time will be allocated to discuss any questions or uncertainties that may arise. The instructor may opt to have the participants attempt the review worksheet first and then proceed with the review process. In addition, the instructor may also choose to include a number of additional topic related activities as part of the review process.

The major part of this component will consist of developing an appropriate, well thought-out, lesson plan related to the topic *Information Processing, Computer Systems, and Lab Management (IP/CS/LM)*. Each lesson should reflect the participants' understanding of the related music education topics and show the related technologies seamlessly blended into the framework. Each lesson plan will be posted as part of the WC or made available to the instructor and the other participants for review, discussion, and commentary.

*Please note that each of the participants will be presenting at least one of their lesson plans to the entirety of the class as part of the course requirements.*

### **Select Topics for Review:**

1. Desktop, laptop, and mobile computer operating systems and manufacturers
2. Computer hardware, auxiliary audio/video (internal or external) specifications
3. Related peripheral equipment for presenting, discussing, and collaborating with students (LCD projectors, interactive whiteboards, student response devices etc.)
4. Productivity software, administration software, music-specific (niche) software, and communications software
5. Music Instrument Digital Interface-related (MIDI) equipment
6. Local Area Networks (LANS), and Wide Area Networks (WANS)
7. Computer lab design as it relates to music educators
8. Computer-related problem solving techniques and security measures
9. Organizations and companies that will help with building labs and help with finding related grant resources

10. Budgetary considerations for implementing and maintaining a music or pseud-music computer lab environment

11. Methods, educational materials, and Internet-based resources related to the topic

### **Lesson Plan Detail:**

Create a detailed lesson plan that is appropriate for use in any music education class that integrates concepts from the TI:ME Technology Standard: **Information Processing, Computer Systems, and Lab Management**. This lesson plan may be completed using the WC or completed locally via computer.

Each lesson plan must include all of the elements in the associated lesson plan template for use with this course and will be assessed with the following criteria:

- Completeness and adherence to the lesson plan template
- Demonstrated knowledge and applicability of the technology standard as integrated into the lesson plan
- Appropriate usage of technology for use in the music classroom and with the targeted music education topic(s) of the lesson plan

**Note:** *Each lesson plan will be converted into a PDF and also transferred to the TI:ME website at the end of the course.*

## **Information Processing, Computer Systems, and Lab Management**

*(Also available to utilize as part of the WC)*

**Instructions:** Please be verbose with regard to answering each question. Use bullet points and link to related Internet addresses where appropriate as part of the discussion for each question.

1. Name three current manufacturers of computer systems and the operating systems are commonly associated with them.
2. Name three current manufacturers of mobile computer devices.
3. In today's current laptop and desktop computers, how much memory (RAM) do we expect to for a normal system? How much hard drive space? Speed? Number of processors (CPUs)?
4. Describe how Music Instrument Digital Interface (MIDI) devices are typically connected to today's computers.
5. What are Interactive Whiteboards (IWBs)? How are they typically used in music education environments?

6. What are some of the productivity software programs typically installed on a desktop/laptop? MIDI software? Music education software?
7. Describe a how a LAN is similar and different from a WAN.
8. How is Bluetooth different from WI-FI technologies? What are 3G and 4G technologies as they relate to cellular communication?
9. What are the typical security measures that should be taken to protect your computers from malware and viruses?
10. Using USB MIDI devices, how can a non-specific-computer lab be turned into a functional music education lab?
11. What companies help with developing music-education specific hardware and help with designing music computer lab environments?
12. What Web 2.0 Websites can be implemented in an IP/CS/LM environment?
13. What copyright concerns must be considered when in connection with this topic?
14. What local, state, or national standards are most associated with the implementation of this TI:ME technology standard in a music course or class?

**Optional Review Activity: Create and Design a Music Education Lab Environment**

<p><b>Objectives:</b> Upon completion you will be able to:</p>	<ul style="list-style-type: none"> <li>• Demonstrate a knowledge of typical music education lab requirements and designs</li> <li>• Create appropriate budget proposals and understand budgetary concerns related to music education lab designs</li> </ul>
<p><b>Activity:</b></p>	<ul style="list-style-type: none"> <li>• The instructor will give a brief related topic demonstration</li> <li>• Create various music education lab designs and associated budgets for use in a different learning environments</li> </ul>
<p><b>Activity Worksheet:</b></p>	
<p>Create, alone or brainstorm with a group, one or more music lab designs and budget for use in a school or learning environment. Include sketches/mock-ups of layouts, hardware and software items, and related costs associated with building and maintaining the lab(s). Also consider what might be used as the teacher's station or as additional auxiliary learning devices and equipment (audio, video, interactive white boards, etc.)</p> <p>Suggested design starting points:</p> <ul style="list-style-type: none"> <li>• An elementary classroom</li> </ul>	

- A middle school general music classroom
- A middle school performance/rehearsal room
- A library equipped with network computers (what software and hardware could be added?)
- Upgrading an existing, yet older, music lab environment
- A portable music education cart/system
- A general classroom utilizing mobile and/or smart devices
- Portable designs for use outdoors or with traveling groups

**Notes:**

*Depending upon course needs, the instructor may include this and/or other optional activities from the TI:ME 1A and 1B books or other resources.*

## Lesson Plan Template

**Title of the lesson:** \_\_\_\_\_

**This lesson plan developed by:** \_\_\_\_\_

**Target Student Level:** Kindergarten-Pre- | Elementary | Secondary | College

**Type of Class (general music, ensemble, etc.):**  
\_\_\_\_\_

**Duration of the lesson:** \_\_\_\_\_

**Description of the lesson:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Objective(s) of the lesson:**  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Pre-Requisite Skills required (if any):**

\_\_\_\_\_

\_\_\_\_\_

**Equipment/Materials required:** \_\_\_\_\_

\_\_\_\_\_

**National/State/Local Standards Addressed:** \_\_\_\_\_

\_\_\_\_\_

**TI:ME Technology Areas Addressed:**

\_\_\_\_\_

**Procedures/Anticipatory Set:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Lesson Detail:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

*(expand to fit lesson)*

**Lesson Evaluation and Assessment Rubric:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Future/Related/Connected Lesson**

**Plans:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### **Final project form**

**Name of the person teaching the lesson:** \_\_\_\_\_

**Name of commenter:** \_\_\_\_\_

**Title of the lesson plan:** \_\_\_\_\_

**A brief description of the lesson:** \_\_\_\_\_

\_\_\_\_\_

**Lesson feedback and impressions made during the delivery of the lesson:**

Author  
Deleted: - ... [2]



---

---

---

---

---

**Which MENC Standard(s) were emphasized in this lesson (circle)?**

(1) Singing, alone and with others; (2) Performing on instruments; (3) Improvising melodies; (4) Composing and Arranging Music; (5) Reading and notating music; (6) Listening to, analyzing and describing music; (7) Evaluating music and music performances; (8) Understanding relationships between music, the other arts, and disciplines outside the arts; (9) Understanding Music in Relation to History and Culture

**Which TI:ME technology(s) area did this lesson utilize (circle)?**

- 1-Electronic Musical Instruments
- 2-Music Notation Software
- 3-Musical Production including MIDI Sequencing and Digital Audio
- 4-Technology-assisted learning software (CAI)
- 5-Multimedia & Digitized Media
- 6-Information Processing, Computer Systems, Lab Management

**Was the lesson effective (why or why not)?** \_\_\_\_\_

---

---

**How could the lesson have been changed to make it better?**

---

---

**Course Appendix A – National Standards for Music Education**

**MENC: *The National Association for Music Education* – National Standards for Music Education:**

- 1. Singing, alone and with others, a varied repertoire of music.
- 2. Performing on instruments, alone and with others, a varied repertoire of music.
- 3. Improvising melodies, variations, and accompaniments.
- 4. Composing and arranging music within specified guidelines.
- 5. Reading and notating music.
- 6. Listening to, analyzing, and describing music.
- 7. Evaluating music and music performances.

Author \_\_\_\_\_  
Deleted: -

8. Understanding relationships between music, the other arts, and disciplines outside the arts.
9. Understanding music in relation to history and culture.

**Find out more information online:**

- ✓ <http://www.menc.org/resources/view/national-standards-for-music-education>
- ✓ [http://en.wikipedia.org/wiki/Music\\_education](http://en.wikipedia.org/wiki/Music_education)
- ✓ <http://mustech.net/music-ed-standards/>

## **Course Appendix B – National & State Standards Correlation Document**

**Example:** Comparison of National Standards with Pennsylvania State Standards for Arts and Humanities

### **National Standards and Pennsylvania State Standards for Arts and Humanities Correlations:**

**Sources:** MENC's *National Standards for Music Education* and the Pennsylvania Department of Education's *Academic Standards for the Arts and Humanities*

<b>MENC's National Standards</b>	<b>Pennsylvania's State Arts/Humanities</b>
----------------------------------	---

	<b>Standards</b>
1. Singing, alone and with others, a varied repertoire of music.	9.1 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
2. Performing on instruments, alone and with others, a varied repertoire of music.	9.1 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
3. Improvising melodies, variations, and accompaniments.	9.1 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
4. Composing and arranging music within specified guidelines.	9.1 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
5. Reading and notating music.	9.1 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
6. Listening to, analyzing, and describing music.	9.3 Critical Response & 9.4 Aesthetic Response
7. Evaluating music and music performances.	9.3 Critical Response & 9.4 Aesthetic Response
8. Understanding relationships between music, the other arts, and disciplines outside the arts.	9.2. Historical and Cultural Contexts
9. Understanding music in relation to history and culture.	9.2. Historical and Cultural Contexts

**Pennsylvania Standards for the Arts and Humanities:**

- 9.1 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
- 9.2 Historical and Cultural Contexts
- 9.3 Critical Response
- 9.4 Aesthetic Response

**Direct location of PA Standards and online resources:**

- ✓ [http://www.paea.org/images/stories/resources/standards/pa\\_arts\\_standards.pdf](http://www.paea.org/images/stories/resources/standards/pa_arts_standards.pdf)
- ✓ <http://www.pde.state.pa.us/>

**EMPTY TEMPLATE:** Comparison of National Standards with \_\_\_\_\_ State Standards

**National Standards and State Standards  
for Arts and Humanities Correlations:**

Sources: MENC's *National Standards for Music Education* and \_\_\_\_\_

<b>MENC's National Standards</b>	<b>_____ State Standards</b>
1. Singing, alone and with others, a varied repertoire of music.	

2. Performing on instruments, alone and with others, a varied repertoire of music.	
3. Improvising melodies, variations, and accompaniments.	
4. Composing and arranging music within specified guidelines.	
5. Reading and notating music.	
6. Listening to, analyzing, and describing music.	
7. Evaluating music and music performances.	
8. Understanding relationships between music, the other arts, and disciplines outside the arts.	
9. Understanding music in relation to history and culture.	

**State Standards (list them):**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

**Direct location of Standards and online resources:**

- ✓ *List resources*
- ✓ *List resources*

## Course Appendix C – TI:ME Technology Areas

These are the six technology competency areas as described in the *Technology Strategies for Music Education* publication:

### 1. Electronic Musical Instruments

- a. Keyboards
- b. Controllers
- c. Synthesizers & Samplers

d. Ensemble Performance

**2. Music Production**

- a. Data Types
  - i. MIDI
  - ii. Digital Audio
- b. **Processes**
  - i. Looping
  - ii. Sequencing
  - iii. Signal Processing
  - iv. Sound Design

**3. Music Notation Software**

**4. Technology-Assisted Learning**

- a. Instructional Software
- b. Accompaniment/Practice Tools
- c. Internet-based Learning

**5. Multimedia**

- a. Multimedia Authoring
  - i. Web Pages
  - ii. Presentations
  - iii. Movie, DVD, etc.
- b. Digital Image Capturing
- c. Internet
- d. Electronic Portfolios

**6. Productivity Tools, Classroom and Lab Management**

- a. Productivity Tools
- b. Computer Systems
- c. Lab Management Systems
- d. Networks

**Course Appendix D – InTasc Core Teaching Standards**

The *InTasc Core Teaching Standards*, developed by the *Council of Chief State School Officers*, were first published in 1992 and revised in April of 2011 to reflect current teaching methods for next generation learners. These standards outline what all teachers should know and be able to do in order to be an effective teacher in today's learning environments. They provide a particularly useful context for self-evaluation and to use as a backdrop for consideration alongside the creation of the lesson plans that are a part of this course.

**The Learner and Learning:**

**Standard #1: *Learner Development.*** The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate and challenging learning experiences.

**Standard #2: *Learning Differences.*** The teacher uses understanding of individual differences and diverse cultures and communities to ensure inclusive learning environments that enable each learner to meet high standards.

**Standard #3: *Learning Environments.*** The teacher works with others to create environments that support individual and collaborative learning, and that encourage positive social interaction, active engagement in learning, and self-motivation.

### **Content:**

**Standard #4: *Content Knowledge.*** The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates learning experiences that make the discipline accessible and meaningful for learners to assure mastery of the content.

**Standard #5: *Application of Content.*** The teacher understands how to connect concepts and use differing perspectives to engage learners in critical thinking, creativity, and collaborative problem solving related to authentic local and global issues.

### **Instructional Practice:**

**Standard #6: *Assessment.*** The teacher understands and uses multiple methods of assessment to engage learners in their own growth, to monitor learner progress, and to guide the teacher's and learner's decision making.

**Standard #7: *Planning for Instruction.*** The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

**Standard #8: *Instructional Strategies.*** The teacher understands and uses a variety of instructional strategies to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in meaningful way

### **Professional Responsibility:**

**Standard #9: *Professional Learning and Ethical Practice.*** The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

**Standard #10: *Leadership and Collaboration.*** The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues,

other school professionals, and community members to ensure learner growth, and to advance the profession.

**Direct Citation:**

Council of Chief State School Officers. (2011, April). Interstate Teacher Assessment and Support Consortium (InTASC) Model Core Teaching Standards: A Resource for State Dialogue. Washington, DC: Author.

A complete PDF document may be found online directly at this URL:

[http://www.ccsso.org/Documents/2011/InTASC\\_Model\\_Core\\_Teaching\\_Standards\\_2011.pdf](http://www.ccsso.org/Documents/2011/InTASC_Model_Core_Teaching_Standards_2011.pdf)

## **Course Appendix E – Framework for 21<sup>st</sup> Century Learning**

The Partnership for 21<sup>st</sup> Century Skills has developed a framework for developing 21<sup>st</sup> Century Skills with our students. Their framework is becoming widely adopted and is supported by MENC: *The National Association of Music Educators*. As part of this course, considering these initiatives will help to develop lesson plans that are designed with these 21<sup>st</sup> century skills in mind. The following is a brief outline of the framework:

### **Core Subjects and 21<sup>st</sup> Century Themes**

The framework lists English, reading or language arts, world languages, arts, mathematics, economics, science, geography, history, government and civics as core subjects. As part of the framework, schools must also promote an understanding of academic content at higher levels by weaving the following 21st century interdisciplinary themes into the core subjects:

- Global Awareness
- Financial, Economic, Business and Entrepreneurial Literacy
- Civic Literacy
- Health Literacy
- Environmental Literacy

### **Learning and Innovation Skills**

Learning and innovation skills are essential to preparing for the complexities and working environments in today's world. The framework includes developing "outside of the box" skills. These skills have collectively become known as the "4 Cs":

- Creativity and Innovation
- Critical Thinking and Problem Solving
- Communication and Collaboration

### **Information, Media and Technology Skills**

Because the citizens of "today" must exhibit a range of very technical, functional, and critical thinking skills to be effective in today's technology and media-driven environment, the framework places a good deal of emphasis on the following:

- Information Literacy
- Media Literacy
- ICT (Information, Communications and Technology) Literacy

### **Life and Career Skills**

Students are required to have more than "thinking skills" and simple "content knowledge", they must be able to transverse the complex working environments in our globally competitive information age. As part of the framework, students are required to pay attention to developing adequate life and career skills such as:

- Flexibility and Adaptability
- Initiative and Self-Direction
- Social and Cross-Cultural Skills
- Productivity and Accountability
- Leadership and Responsibility

### **Direct Citation:**

Partnership for 21<sup>st</sup> Century Skills. (2011, March). Framework for 21<sup>st</sup> Century Learning. Washington, DC: Author.

A complete PDF document may be found online directly at this URL:

[http://www.p21.org/documents/P21\\_Framework\\_Definitions.pdf](http://www.p21.org/documents/P21_Framework_Definitions.pdf)

## **Course Appendix F – Select Web Resources**

### **Audio Editing/DAW/MIDI Sequencing Software:**

Ableton Live - <http://www.ableton.com/>



Adobe Audition - <http://www.adobe.com/products/audition.html>  
Anvil Studio – <http://anvilstudio.com>  
Ardour - <http://ardour.org/>  
Audacity - <http://audacity.sourceforge.net>  
Avid Pro Tools - <http://www.avid.com/us/products/family/pro-tools>  
Cakewalk Sonar - <http://www.cakewalk.com/products/sonar>  
Goldwave - <http://www.goldwave.com>  
Logic Pro - <http://www.apple.com/logicstudio/logicpro>  
n-Track Studio - <http://ntrack.com>  
PreSonus Studio One – <http://presonus.com/studionone>  
Propellerhead Reason - <http://www.propellerheads.se/products/reason>  
Sony Sound Forge - <http://www.sonycreativesoftware.com/audiostudio>  
Steinberg Cubase - <http://www.steinberg.net/en/products/cubase>  
Wavosaur - <http://www.wavosaur.com/>

### **Audio/Video Conversion:**

Freemake - <http://www.freemake.com>  
Fre:ac – <http://freac.org>  
HandBrake – <http://handbrake.fr>  
Mediacoder - <http://www.mediacoderhq.com>  
Super - <http://www.erightssoft.com/SUPER.html>  
Switch Audio Converter - <http://www.nch.com.au/switch>

### **CAI/MISC Music Software/Sites:**

Auralia – [www.sibelius.com/products/auralia](http://www.sibelius.com/products/auralia)  
Alfred Creating Music Series – <http://alfred.com>  
Band in a Box – <http://pgmusic.com>  
Classroom Maestro - <http://www.timewarptech.com>  
Dolmetsch Online – <http://dolmetsch.com>  
Ear Master – <http://earmaster.com>  
GNU Solfege – <http://solfege.org>  
O- Generator – <http://www.o-music.tv/product.htm>  
MiBAC Music Lessons - <http://www.mibac.com>  
Music Ace Series - <http://www.harmonicvision.com>  
Music Theory.net – <http://musictheory.net>  
Sibelius Compass - <http://www.sibelius.com/products/compass>  
Sibelius Groovy Music - <http://www.sibelius.com/products/groovy>  
SmartMusic – <http://smartmusic.com>  
Vic Virth Education - <http://www.vicfirth.com/education>

### **Copyright Resources:**

ASCAP – <http://ascap.com>  
BMI – <http://bmi.com>  
HarryFox Agency – <http://harryfox.com>

Music Publisher's Association – <http://mpa.org>  
MENC Copyright Center - <http://www.menc.org/resources/view/copyright-center>  
SESAC – <http://sesac.com>  
U.S. Copyright Office – <http://copyright.gov>

#### **Electronic Music Manufacturers:**

Akai - <http://www.akaipro.com/en/index.php>  
Avid/M-Audio - <http://www.avid.com/US/products/family/M-Audio>  
Korg – <http://korg.com>  
Kurzweil - <http://www.kurzweilmusicsystems.com>  
Moog - <http://www.moogmusic.com/>  
Roland – <http://rolandus.com>  
Yamaha - <http://usa.yamaha.com/products/musical-instruments>

#### **Graphic/Imaging Software:**

Adobe Products - <http://www.adobe.com/products/photoshopfamily.html>  
FastStone Image products - <http://www.faststone.org>  
GIMP - <http://www.gimp.org>  
Gyazo – <http://gyazo.com>  
Music Graphics Galore – <http://musicgraphicsgalore.net>  
Paint.net - <http://www.getpaint.net/>  
Picasa – <http://picasa.google.com>  
Seashore - [http://seashore.sourceforge.net/The\\_Seashore\\_Project/About.html](http://seashore.sourceforge.net/The_Seashore_Project/About.html)

#### **Loop-based Audio Software:**

FL Studio - <http://flstudio.image-line.com>  
Garageband - [www.apple.com/ilife/garageband](http://www.apple.com/ilife/garageband)  
MixCraft – <http://www.acoustica.com/mixcraft>  
Myna - <http://www.aviary.com/tools/audio-editor>  
Sony ACID - <http://www.sonycreativesoftware.com/acidsoftware>  
Soundation - <http://www.soundation.com>  
Sequel – <http://sequel-music.net>  
TrakAx - <http://www.trakax.com>

#### **Music Education Technology Hardware/Software Specialists:**

McCormick's - <http://www.mccormicksnet.com>  
SoundTree - <http://soundtree.com>  
Sweetwater - <http://www.sweetwateredu.com>

### Music Education/Technology/Social Organizations/Communities:

ATMI - <http://atmionline.org>  
ICMA - <http://computermusic.org>  
MENC - <http://menc.org>  
MENC Groundswell - <http://advocacy.menc.org>  
MPLN - <http://mpln.org>  
NAMM - <http://namm.org>  
NAMM Support Music - <http://supportmusic.com>  
TI:ME - <http://ti-me.org>  
TWITTER - <http://twitter.com/#!/search/musedchat>

### Musical Instrument Digital Interface (MIDI) resources:

MIDI Manufacturers Association: <http://www.midi.org>  
MIDI Tech Specs: <http://www.midi.org/techspecs/index.php>  
MIDI Implementation Chart: [http://www.midi.org/techspecs/midi\\_chart-v2.pdf](http://www.midi.org/techspecs/midi_chart-v2.pdf)

### Music Notation Software:

Finale - <http://finalemusic.com>  
LilyPond - <http://lilypond.org>  
MuseScore - <http://musescore.org>  
Noteflight - <http://noteflight.com>  
Notion - <http://notionmusic.com>  
Sibelius - <http://sibelius.com>

### Online Music Education Resource Indexes:

Cybraryman - <http://www.cybraryman.com/music.html>  
Diigo Music Education Group - <http://groups.diigo.com/group/musiceducation>  
K-12 Music Resources - <http://www.hickorytech.net/~cshirk/k-12music>  
MERL - <http://www.soundpiper.com/cpiper/merlmenu.htm>  
Music Tech Teacher - <http://www.musictechteacher.com/links.htm>  
MPLN Links - <http://musicpln.org/mpln-links/links>  
TI:ME - <http://ti-me.org/index.php/publications-a-resources/other-resources>

### Sheet Music/Composition Resources:

8notes - <http://www.8notes.com>  
Choral Public Domain Library - <http://www3.cpd.org/wiki>  
Free-scores – <http://free-scores.com>  
Gutenberg Project - [http://www.gutenberg.org/wiki/Gutenberg:The\\_Sheet\\_Music\\_Project](http://www.gutenberg.org/wiki/Gutenberg:The_Sheet_Music_Project)  
Petrucci Music Library - <http://imslp.org>  
Mutopia Project - <http://www.mutopiaproject.org>  
The L.S. Levy Collection - <http://levysheetmusic.mse.jhu.edu>  
Library of Congress - <http://memory.loc.gov/ammem/mussmhtml/mussmhome.html>  
Sheet Music Archive - <http://www.sheetmusicarchive.net>

#### Web 2.0 Tools:

Go2Web2.0 – <http://go2web20.net>

#### Website/Blog/Community Creation:

Blogger – <http://blogger.com>  
Edublogs – <http://edublogs.org>  
Google Sites – <http://sites.google.com>  
Grou.ps – <http://grou.ps>  
KidBlog- <http://kidblog.org>  
Ning – <http://ning.com>  
Posterous – <http://posterous.com>  
Spruz – <http://spruz.com>  
Tumblr – <http://tumblr.com>  
TypePad – <http://typepad.com>  
Weebly – <http://weebly.com>  
Wikispaces – <http://wikispaces.com>  
Wix – <http://wix.com>  
WordPress – <http://wordpress.org>

Author  
Deleted: -

## Course Appendix G– Lesson Plan Template

Title of the lesson: \_\_\_\_\_

This lesson plan developed by: \_\_\_\_\_

Target Student Level: Kindergarten-Pre- | Elementary | Secondary | College

Type of Class (general music, ensemble, etc.):  
\_\_\_\_\_

Duration of the lesson: \_\_\_\_\_

Description of the lesson: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Objective(s) of the lesson:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Pre-Requisite Skills required (if any):  
\_\_\_\_\_  
\_\_\_\_\_

Equipment/Materials required: \_\_\_\_\_  
\_\_\_\_\_

National/State/Local Standards Addressed: \_\_\_\_\_  
\_\_\_\_\_

TI:ME Technology Areas Addressed:  
\_\_\_\_\_

Procedures/Anticipatory Set:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Lesson Detail: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(expand to fit lesson)*

**Lesson Evaluation and Assessment Rubric:**

\_\_\_\_\_  
\_\_\_\_\_  
—

**Future/Related/Connected Lesson Plans:**

\_\_\_\_\_

**Course Appendix H– Final Project Form**

**Final project form**

**Name of the person teaching the lesson:** \_\_\_\_\_

**Name of commenter:** \_\_\_\_\_

**Title of the lesson plan:** \_\_\_\_\_

**A brief description of the lesson:** \_\_\_\_\_

\_\_\_\_\_

**Lesson feedback and impressions made during the delivery of the lesson:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Which MENC Standard(s) were emphasized in this lesson (circle)?**

(1) Singing, alone and with others; (2) Performing on instruments; (3) Improvising melodies; (4) Composing and Arranging Music; (5) Reading and notating music; (6) Listening to, analyzing and describing music; (7) Evaluating music and music performances; (8) Understanding relationships between music, the other arts, and disciplines outside the arts; (9) Understanding Music in Relation to History and Culture

**Which TI:ME technology(s) area did this lesson utilize (circle)?**

- 1-Electronic Musical Instruments
- 2-Music Notation Software
- 3-Musical Production including MIDI Sequencing and Digital Audio
- 4-Technology-assisted learning software (CAI)

Author  
Deleted: -

5-Multimedia & Digitized Media  
6-Information Processing, Computer Systems, Lab Management

Was the lesson effective (why or why not)? \_\_\_\_\_

---

---

What additional things could have been added to the lesson to make it better?

---

## Course Appendix I– TI:ME Specific Resources

1. History and Mission of TI:ME:  
<http://ti-me.org/index.php/about/our-mission>
2. TI:ME Officers and Board Members:  
<http://ti-me.org/index.php/about/the-people-of-time>
3. TI:ME Instructors:  
<http://ti-me.org/index.php/professional-development/instructors>
4. TI:ME Membership Information:  
<http://ti-me.org/index.php/membership/member-benefits>
5. TI:ME State Chapters:  
<http://ti-me.org/index.php/membership/time-state-and-international-chapters>
6. TI:ME Conferences and Information:  
<http://ti-me.org/index.php/conferences>
7. TI:ME Certification and Procedures Information:  
<http://ti-me.org/index.php/professional-development/certification/certification-and-procedures>
8. TI:ME Professional Development Opportunities:  
<http://ti-me.org/index.php/professional-development/offering-courses/offering-time-courses>
9. TI:ME Course Materials/Information:  
<http://ti-me.org/index.php/professional-development/course-materials>
10. TI:ME Course Locations/Dates/Times:  
<http://ti-me.org/index.php/professional-development/locations>
11. TI:ME Publications:  
<http://ti-me.org/index.php/publications-a-resources/publications/books-and-publications>
12. TI:ME Resources List:  
<http://ti-me.org/index.php/publications-a-resources/other-resources>

Author

Deleted: -

*Please help us to spread the word about TI:ME!*

