# Independent Study Course Syllabus

**Course Number:** MUS 901  
**Course Title:** Integrate Science and Music

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<tr>
<th>Online</th>
<th>X Distance Learning</th>
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<tr>
<th>Instructor:</th>
<th>Mary Miché'</th>
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<tbody>
<tr>
<td>Phone number:</td>
<td>510.845.8417 (voice mail)</td>
</tr>
<tr>
<td>Email:</td>
<td><a href="mailto:marymiche@jps.net">marymiche@jps.net</a></td>
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<th>Units:</th>
<th>3</th>
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<td>Grade Level:</td>
<td>Pre K-Elm.</td>
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## Course Description
This is a course for preschool and elementary teachers to encourage the integration of music into the teaching of science. Teachers will explore the standards for science at their chosen grade level and select music that will reinforce science concepts for their age group. Teachers will review a variety of science related songs for children. They will identify the concepts covered by the songs and select appropriate songs for the science standards at their grade level. Teachers will produce a compilation of selected science songs, lesson plans to accompany the songs, and lyrics collected into a songbook, tailored to the needs of their students.

## Course Dates
Self-paced; students may enroll at any time and take up to one year to complete assignments.

You have up to one year from the date of registration, and no less than three weeks (one week per credit), to complete the course.

## Course Materials
The course materials will include the syllabus, the textbook: *A Well-Tempered Mind* by Peter Perrett,  

## Course Requirements
1. Contact the instructor by email at the beginning, middle and end of the course.  
2. Read the textbook  
3. Answer three essay questions, discussing the information in the text.  
4. Print out the state standards in science for the particular grade level chosen.

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Course Number and Title: MUS 901 Integrate Science and Music  
Instructor: Mary Miché  
Date of Revision 6/9/16  
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5. Write two personal essays about musical experiences and current teaching situation.

6. Listen to all of the compact discs, creating an annotated bibliography for each CD, paying special attention to the concepts covered by each song.

7. Select 20 songs for the chosen grade level and to create a CD for classroom use.

8. Make a songbook of the lyrics for the 20 songs to accompany the CD.

9. Write a lesson plan for integrating each song with a science lesson, especially outlining the science concept taught, the science standard that the lesson addresses, and discussion questions for the class to explore as an extension of the science learning.

10. Complete a research paper on the effects of music on learning in other subject areas.

The completed work will consist of:
- a portfolio of the five essay questions (three about the textbook and two personal essays)
- a list of the standards for the grade level
- the annotated bibliography, (listing every song, and the concepts taught)
- a copy of the 20 selected songs on compact disc
- a copy of the lyrics in a songbook format
- a one-page lesson plan for each song outlining the science concepts and standards addressed.

Final Course Grade and Transcripts
When all work for the course has been completed, students will need to logon to the Center for Professional Development website (http://ce.fresno.edu/cpd) to “Submit Grade Form”. Once the instructor fills out the grade form online, students may log back in to request their Grade Report as well as order transcripts online. Please allow at least two weeks for the final grade to be posted. For more information see the Independent Studies Policies and Procedures that were sent to you when you received your course materials, or in your online course. They are available, also at http://ce.fresno.edu/cpd - under General Information > CPD Policies.

Plagiarism and Academic Honesty
All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled according to the procedures set forth in the Fresno Pacific University Catalogue. URL http://www.fresno.edu.

CONTINUING EDUCATION PROGRAM STUDENT LEARNING OUTCOMES:

<table>
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<tr>
<th>CE 1. Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.</th>
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<tr>
<td>CE 2. Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.</td>
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<tr>
<td>CE 3. Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.</td>
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CE 4. Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.

CE 5. Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.

CE 6. Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.

FRESNO PACIFIC UNIVERSITY STUDENT LEARNING OUTCOMES

**Student Learning Outcomes Oral Communication:** Students will exhibit clear, engaging, and confident oral communication – in both individual and group settings – and will critically evaluate content and delivery components.

**Written Communication:** Students will demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others.

**Content Knowledge:** Students will demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.

**Reflection:** Students will reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and vocational improvement.

**Critical Thinking:** Students will apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to new situations.

**Moral Reasoning:** Students will identify and apply moral reasoning and ethical decision-making skills, and articulate the norms and principles underlying a Christian world-view.

**Service:** Students will demonstrate service and reconciliation as a way of leadership.

**Cultural and Global Perspective:** Students will identify personal, cultural, and global perspectives and will employ these perspectives to evaluate complex systems.

**Quantitative Reasoning:** Students will accurately compute calculations and symbolic operations and explain their use in a field of study.

**Information Literacy:** Students will identify information needed in order to fully understand a topic or task, explain how that information is organized, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.

To register for courses go to [http://ce.fresno.edu/cpd](http://ce.fresno.edu/cpd) and log in.
**Schedule of Topics and Assignments**

Assignments include a range of strategies and opportunities for graduate level work in:

1. Reflective writing: Two personal essays
2. Critical thinking: Three essays on questions posed by the instructor about the textbook
3. Direct application to classroom: Creation of a songbook, a CD of 20 songs, and lesson plans to accompany those songs
4. Use of current “best practice” learning strategies: Use of music to reinforce concepts
5. Development of discussion questions that encourage critical thinking: In the lesson plans that tie science and music together, students will pose questions that will be used in the classroom to encourage critical thinking skills and extend the lessons.
6. Identification of specific state standards being addressed in the assignments: Students research and list the state standards in science for their chosen grade level. Students choose music based on the standards.

**Required Essay Questions, concerning the text** (60 points possible, 20 points per question)

Write two pages per question, double-spaced, with the question listed at the top of the page. Include quotes from the text to support assertions made. Quotes must be noted with page numbers in parentheses.

1. Theorize why the instruction of the quintet had an impact on the student’s test scores.
2. Create a list of questions that would imitate the Socratic Method used by the quintet.
3. Compare and contrast your method of incorporating science concepts into music learning with the methods used by the woodwind quintet.

**Required Essay Questions, personal musical experience** (40 points possible, 20 points per question)

Please address all aspects of the questions for each essay. Points are deducted for lack of requested information and for lack of addressing the state standards in question two.

1. Describe your experiences with young children, such as babysitting, camping, classroom teaching, counseling, or children of your own. Discuss how you became interested in teaching children, how long you have been working with children, and experiences you have had with them. Describe your musical background. Did you have an elementary teacher who taught music? What was that experience like for you? If you played an instrument as a child, what did you play, for how long did you play and how did you feel about playing an instrument? Discuss your singing experiences, especially when you were a child, and how you feel about singing with children.

2. Describe your current classroom setting, or if you are not currently teaching, your desired setting. Outline the age of your students, their musical background (if any) and the ethnic mix of children. Give the location of your school (rural, suburban, urban, or inner city) as well as the city, state and country. Consider the standards in music. Are there any...
standards that you already teach in your classroom? What part of the standards in music would you like to incorporate into your curriculum?

**Bibliography of Songs:** (120 points possible, one point per song listed)
The reason for creating the bibliography is for you to have a listing of the concepts that you can match up with your science standards. It is also to indicate to the instructor that you did actually listen to the assigned CDs. Please list all of the songs on the 10 CDs and write the concepts taught by each song. For every song, list the title of the album, with the correct song title, the recording artist, and the writer of the song. Points will be deducted for lack of song information. For the most efficient listing, songs can be listed by album first, then song title, recording artist, songwriter, and concepts. For example:


**Compact Disc of 20 selected songs** (40 points possible for the CD, 2 points per song)
Use windows media player, real player, limewire, or itunes, (or any other suitable program) to record the chosen songs onto a play list. Following the instructions of the program, burn a CD with your chosen play list. If you are unfamiliar with the use of such programs please email the instructor to discuss other alternatives. You are welcome to research other musical artists and other songs.

**Song Book:** (60 points possible, 2 points per song sheet)
Type the words to your chosen songs into a word processing program, producing one song per page. Make sure that all the words to the song fit on one page by adjusting the font size.

**Lesson Plans:** (120 points possible, 6 points per lesson plan)
The lesson plans must reflect the state standards in science. List the title of the song, the recording artist, the writer, and album title at the top of the lesson plan. List the science standard and concept being addressed on the next line. Outline how the song will be used to promote the science concept. List questions to ask the students. List the vocabulary in the song to be discussed with students. Discuss how you will extend the lesson into other related science concepts. Points will be deducted for lack of song information or a state standard. You are welcome to research other musical artists and other songs. You may use the following links help you find the standards for the grade level you have chosen:

- www.mcrel.org/standards-benchmarks
- http://www.academicbenchmarks.com/search/
- www.education-world.com/standards

Be sure to print out a list of all the state standards in science for the grade level you have chosen.

**Research Paper:** (80 pts possible) 70 pts for the paper, 5-7 pages, 10 pts for bibliography,
Write a position paper on a topic of choice beginning with a thesis statement and outlining the supporting information gathered in the research. A research question should be outlined in the opening paragraph. Read research articles and select a topic of interest to research. Supporting information should be discussed in the body of the research paper. You can consult websites on music education research. You are also expected to discuss the impact of this research on classroom practice. An appropriate conclusion should close the paper. Please include a bibliography of sources researched. The quality of the writing and research will be evaluated. Points will be deducted for lack of research references, poor grammar or misspellings, and excessive personal opinions. Points will be deducted for lack of a question, lack of supporting research and rambling on with generalizations and opinions.

Tips for the Research Paper: Here are some ideas about how to do a research paper. First, pick a topic that is easy to research, such as "music helps students learn to read." Get your topic honed down to a specific question, then take your whole research question and search it on google. It should take about a weekend to look for studies, read them and decide on relevant quotes. Be sure to keep notes for the bibliography at the end. In writing the research paper, do not write your opinion with a bibliography. Do not include quotes from the text book unless they are very short and relevant. Look for new research, since 2000 and quote from the research articles that you find. In writing the paper, start with an opening thesis. Then state the reasons why you believe this. In the following paragraphs, discuss each reason, citing the research that backs up your opinion. When you get to the end of your reasons and research, summarize your thinking with some ideas of how the research could be implemented in the classroom and what further research is needed on this topic. Be sure to include a bibliography of all the research and where to find it. To receive full points for your paper it must be at least five pages with a clear beginning, middle and end. It must be well written in correct English with good grammar and punctuation. Please be sure to spell check your paper before submitting it. As for format, the paper should be printed in Times Roman 12 point or Arial 10 point, double spaced with one inch margins, five to seven pages in length. You do not need a title page or an abstract.

Instructor/Student Contact (30 points) 10 points per email sent
Students will be expected to make contact with the instructor via email at the beginning, middle and end of the course. The instructor will respond by email with questions for the student to consider as she/he is working to complete the course.

Grading Policies and Rubrics

For a grade of Credit, the student must complete all five essays, the annotated song list, the compact disc containing 20 songs, the 20 lesson plans, the songbook with lyrics for all 20 songs and the research paper. Minimum points 400 needed to pass.

For a grade of "B" the student must complete all five essays, the annotated song list, the compact disc containing 20 songs, the 20 lesson plans, the songbook with the lyrics for all 20 songs and a research paper, with a minimum of 400 points
For a grade of "A" the student must complete all five essays, the annotated song list, the compact disc containing 20 songs, the 20 lesson plans, the songbook with the lyrics for all 20 songs and the research paper, with a minimum of 450 points.

No credit will be given for students with missing components or less than 400 points. Students who enroll in the course for a letter grade need to achieve a grade of “A” or “B.”

Points will be awarded in the following manner:

- Essay Questions for the text: three questions, 20 pts per question, 60 pts possible
- Essays: two personal essay questions, 20 pts per essay, 40 points possible
- Annotated Bibliography (120 points possible) about 120 songs listed
- CD Project (200 pts possible) each song (20 songs) is worth 10 points,
- 2 pts points for the recording, 3 pts per page for the lyrics in the song book, 5 pts points per lesson plan.
- A total of 40 pts for the CD, 60 pts for the songbook, and 100 pts for the lesson plans.
- Research Paper: (70 pts possible) five to seven pages, 10 pts for bibliography,

**Evidence of Learning**

This section will describe what the instructor will be looking for in the student’s work to determine whether or not they achieved the course objectives.

1. Course instructor observed evidence of understanding of course objectives as demonstrated by student's reflective writing assignments: two essays.
2. Course instructor observed evidence of critical thinking skills as demonstrated in the essays discussing the material in the textbook.
3. Course instructor observed evidence of understanding of course objectives as demonstrated through student's presentation of lesson plans, the design of a songbook, and the compact disc with 20 songs.
4. Student demonstrated his/her understanding of appropriate hands-on methods of teaching through his/her presentation of a compact disc and songbook.
5. Student demonstrated his/her understanding of integrating science and music through the lesson plans incorporating the children’s science music compact discs included with this course.
6. Student made connections to the state content standards and applied these standards to the selection of music, integrated into the course content in the science curriculum.
References
This section is a bibliography of suggested additional readings

2. This is Your Brain on Music: The Science of Human Obsession by Daniel J. Levitin ©2007

There are a number of science music for children albums available at Songsforteaching.com.

2. Science Songs with Miss Jenny, Miss Jenny
3. Health and Human Body, Miss Jenny
4. Tuning in to Nature: Songs about the Earth, Fran Avni
5. Musically Aligned: Science Songs 2, Kenny Hood
6. Musically Aligned: Standards-Based Instructional Music, Science Songs 4, Kenny Hood
7. Musically Aligned: Standards-Based Instructional Music Enhanced Science Songs 5, Kenny Hood
8. Tickle Tune Typhoon: Singing Science, Dennis Westphall
9. Mr. Quizmee Asks About Animals
10. Mad Science Factory Professor Boggs:
11. Dirt Made My Lunch The Banana Slug String Band:
12. La Tierra y el Mar The Banana Slug String Band:
13. Adventures on the Air Cycle The Banana Slug String Band:
14. Slugs at Sea The Banana Slug String Band:
15. Goin' Wild! The Banana Slug String Band:
16. Penguin Parade The Banana Slug String Band:
17. Singing In Our Garden The Banana Slug String Band:
18. Lyrical Life Science: Volume 1: Lyrical Learning
20. Lyrical Life Science Volume 3: The Human Body
21. Singin' Songs of Science, J. P. Taylor
22. Naturally, Children's Nature Songs, Foster Brown
24. Intelli-Tunes: Buzzers, Creepers and Crawlers, Ron Brown Science Songs & Stories for the Big Questions, Kathleen Carroll
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