

Music 39A (2013, Autumn)

Music 39A: Music, Health, and Medicine

Course Description

Explore how music relates to health and medicine surveying recent medical literature. Review different techniques in music therapy, music-related health problems, and issues related to educational and medical applications. Course materials are chosen to clearly identify music as a component of health related activity or occupation, to describe responses to music in our mind and body, and to think about the roles of music in our health. The seminars also discuss related basics in psychology and neurology. Students learn how to do literature search, critically analyze, generate new questions, and write essays about relevant topics.

Course Units

3 Units

Time and Place

TTh, 1:15-3:05 pm, Knoll seminar room, room 315

Instructors

Takako Fujioka takako@ccrma.stanford.edu

Office hours: By appointment

Prerequisites

Musical experience

Learning Objectives

Students will learn

- 1) elementary level of:
 - anatomy and physiology of human body and brain related to music making and listening
 - medical problems associated with musician's occupational health, treatments and preventions
 - current states of music therapy practices and research on clinical populations
- 2) concepts of:
 - evidence-based medicine
 - localized vs. distributed brain functions
 - scientific skepticism, empirical research, reproducibility, hypothesis
 - models of music therapy
- 3) skills to:
 - identify own interests and generate questions
 - search online resources and medical literature to identify relevant information
 - critically think about medical research evidence
 - present ideas in presentation and exchange thoughts in group discussion

Grading and Late Policy

Students should demonstrate their ability to

- Digest the materials from lectures/textbooks/articles and explain them to others
- Search research studies and identify structure (question, background, hypothesis, results,

- interpretation)
- Interpret the results and add own thoughts on application, clinical relevance, scientific interest
- Present and exchange the ideas

35%	Attendance and participation
25%	Assignments
25%	Presentation (including project checkpoints)
15%	Final project writeup

Attendance and participation - It is critical that students attend every class and actively participate in discussions. If you are unable to attend a class due to illness or excused absence, you must let the instructor know in advance. Tardiness will also be noted. If you have an overlapping class schedule and have to come late to the class or leave early, also let the instructor know by the end of third week.

Assignments – Assignments and Reading are mostly related. Presentation of the assignments is done in the class time. Description of each assignment will be given in the class too.

Final project presentation and writeup - Students will present and write up their final projects.

Presentations will take place during the last week of class, and the write up will be due during the final exam week.

Late policy: If presentation of a homework assignment in a class time should be missed due to unforeseeable/uncontrollable situations, contact the instructor beforehand, and you can get a next available time in a class to present that work. If no contact is made, still presenting the work at the following week(s) will give you the allocated mark * $(100 - (\# \text{ of classes late}) * 10)\%$.

Students with Documented Disabilities:

Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Student Disability Resource Center (SDRC) located within the Office of Accessible Education (OAE). SDRC staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an *Accommodation Letter* for faculty dated in the current quarter in which the request is being made. Students should contact the SDRC as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 723-1066).

2. Course formats

- 1) Lectures, Guest lectures, workshops
- 2) Readings
- 3) Assignments
- 4) Presentation
- 5) Discussion
- 6) Writing

3. Course outline and schedule

Sep 24: Week 1a

Course Overview, Introduction, and issues between music and health

Description of Homework 1a

Homework 1a

Find a musician with mental/physical disability that are linked to music activities in some way

This should be accompanied with each a four-slide power-point:

- A short biography that includes the years of living, the medical condition and cause if any (e.g., congenital condition? Performance-related? Other medical conditions unrelated to musical activities?), and musical life
- A link to a couple of youtube that introduces the music of this musician
- Your comments on how the disability/experience influenced his/her musicianship and life
- Your impression about whether the disability was a common problem among other musicians.

Useful links:

http://en.wikipedia.org/wiki/Category:Musicians_with_physical_disabilities

<http://www.pastemagazine.com/blogs/lists/2011/05/brilliant-musicians-whove-battled-mental-illness.html>

<http://drugabuse.com/30-famous-musicians-who-have-battled-drug-addiction-and-alcoholism/>

http://en.wikipedia.org/wiki/List_of_rock_musicians_who_died_of_drug_overdose

http://www.altpress.com/contributors/entry/musician_life_coach_dave_sherman_021812

Sep 25: Week 1b

Presentation of Homework 1a

Discussions: the benefit and danger of music making/listening – factors of musician's personality, life style and environment

Seminar: Musician's medical problems headline (abstract)

Lecture: Brief Overview of body systems

Discussion

- identify what systems are relevant to music listening and making?
- assign who's going to talk about different body structure and function

Reading

“Musician's Body” Ch 1

Homework 1b

- the structure and function of the body part of the choice (will be discussed in the class who does what part)
- how is it used? 3 different examples of music performance, what are the potential hazards?)
- should be presented on Oct 3, and uploaded to the coursework by Oct 3, 1pm.

Oct 1: Week 2a

Effective movements that prevents injuries

Feldenkrais workshop by Marcia Scott

Discussions, Questions and Answers

Oct 3: Week 2b

Presentation of Homework 1b.

Lecture: Tissues, Injuries

Reading:

Music, Health, Well-being Chapter 24. “Health promotion in higher music education”

<http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199586974.001.0001/acprof-9780199586974>

Homework 2a: musician's health issues

From the reading and workshop experience, make a four-slide powerpoint presenting your thoughts

on:

- what could be done better in music education in different levels? (pick two - school music program, private lessons, conservatory, post-secondary, community, etc.)
- what do you think are the potential problems in health care?
- how those are related to own experience, workshop, and discussions?
- what kind of research questions should be examined to improve musician's health?
- should be presented on Oct 10, and uploaded to the coursework by Oct 10, 1pm.

Review: hearing loss

Discussion: About Project 1 <part 1>.

Project 1: Class will conduct a survey for music-related problems in your surrounding populations

Supplemental Reading

- "Musician's Body" chapter 5 & 6
- "Structure & function of the body" by Thibodeau, Gary A., 2012. 14th ed. - St. Louis, Mo. Elsevier, 2012.

Oct 8: Week 3a - No class

Oct 10: Week 3b

Presentation: Homework 2a

Discussion: About Project 1 <part 2>

Lecture: Brain (1)

Brain divisions, auditory system, Musical sound/sequence perception, Language, sensorimotor system, auditory-motor coupling, ANS

Homework 3b

- Upload a list of questions to be included in the project 1, separated by categories - Due Oct 14 Monday, 11:59pm

Supplementary Reading

- Coloring worksheets: Brain divisions, ANS sympathetic, and parasympathetic

Oct 15: Week 4a

Discussion: reviewing the pool of survey questions in Project 1.

2pm: Guest lecture - Voice specialist Dr. Jennifer Bergeron, M.D. (Division of Laryngology, Department of Otolaryngology, Head and Neck Surgery, Stanford University School of Medicine)

- Anatomy and physiology - respiration, phonation and articulation
- Physiological changes across lifespan
- Pitch control in singing, Training effects, Roles of auditory feedback
- Casual singing vs. Trained singing, potential health benefits and hazards associated with singing
- Issues in education and typical medical problems
- Roles of ENT doctors and SLP or OT therapists

Homework 4a

- Upload a list of additional (at least five) questions for the project 1, Due Oct 21, Monday, 11:59pm

Oct 17: Week 4b

Guest lecture – Clinical Psychologist Dr. Patrick Gannon “Performance Anxiety in Musicians”

- assessment, self-report measures
- symptoms, physiology and psychology associated with performance anxiety
- treatments and techniques
- case stories
- outstanding questions for research
- questions and answers

Oct 22: Week 5a

Lecture: Brain (2)

Sensory and motor system. Somatotopy. Ascending/Dscending pathway, voluntary and involuntary movements, Spinal chord, Musician's brain reorganized – structure and function, Focal dystonia

Review: Forcal dystonia

Discussion: Survey update

No Reading.

No Homework other than conducting survey

Oct 24: Week 5b

Lecture: Emotion processing, Limbic system, conditioning, arousal, valence, emotional memory, depression, addiction

4-6. Survey results and discussion.

Reading.

- Music, Health, Well-being Chapter 29. “The Brain and positive beiological effects in healthy and clinical populations” by Koelsch and stegemann

<http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199586974.001.0001/acprof-9780199586974>

Oct 29: Week 6a

Group preparation for survey results presentation

2pm. Guest lecture Voice surgeon Dr. Kwang Sung (Division of Laryngology, Department of Otolaryngology, Head and Neck Surgery, Stanford University School of Medicine)

- ① medical problems and treatments
- ② Case stories
- ③ Rehabilitation and prevention
- ④ Unique aspects of problems in performing artists
- ⑤ Outstanding questions in clinical research and roles of clinicians and educators

- ⑥ Q and A
- Practice habits, music education, school system, awareness, research
 - Is using voice properly good for health? If so how?

No Reading

Homework 5b

- Preparing Project 1 presentation. Upload the slides by Oct 31, Thursday, 1pm.

Oct 31: Week 6b

Presentation of Project 1 and Discussion.

Lecture: Music related cognitive functions and disabilities

- Mozart effect debate
- Music-related emotion overview

Reading

- Music, Health, Well-being Chapter 22. "Cognitive performance after listening to music: A review of the Mozart effect" by Schellenberg

<http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199586974.001.0001/acprof-9780199586974>

- "Neurosciences in Music Pedagogy" Chap 9, "Music learning in individuals with disabilities"

Homework 6b:

From the reading materials, pick one topic of interest and make a three-slide power point

- What is the target population and target measures assessing the effects of music learning
- how it is related to medicine – does it solve the disability conditions of the target individuals? Any other merits to environment surrounding that individual? our society?
- what kind of research questions can be related
- should be presented on Nov 5, and uploaded by Nov 5, Tuesday, 1pm.

Nov 5: Week 7a:

Presentation and Discussion: Homework 6b

Review: what actually happens in music therapy?

Discussion

- Participation – is the goal of therapy 'music' for the client? Is it for the therapist?
- What is it that music-therapy is trying to address?

Lecture: Music therapy Introduction, Overview, History, Models

Reading

- "Music, Health, Well-being" Chapter 4. "Music therapy: Models and interventions" by Trondalen and Bonde
- "An introduction to music therapy, theory and practice" Davis, Gfeller, & Thaut (Ed) 3rd edition. Chapter 2 "Music therapy: Historical perspective"

Homework 7a

Based on the readings, come up with a clinical population of your interest (same as homework 6b, or

fine with picking up a different one)

Find a youtube video documenting/explaining music therapy session

Search 1 pubmed entry (2000~) about a research study the effects of music therapy on that target population (the therapy based on the similar principle)

Make a three-slide power-point.

- what type of music therapy (based on the major models) was administered in the research study?
- authors and affiliation – who are the researchers? (professions, institutions, tradition in music therapy education/application?)
- structure of the study from the abstract – hypothesis, methods, results, and interpretation
- why it is interesting?
- strength and weakness of the study
- should be presented on Nov 7, and uploaded by Nov 7, Thursday, 1pm.

Nov 7: Week 7b:

Presentation of the Homework 7a

Description of Project 2:

Conduct literature survey about a specific clinical population and music therapy research evidence

We will ask the following questions:

- Is music therapy effective in this population to treat specific problems indicated by experimental research evidence?
- If so, explain what type of music therapy? What type of problems?
- Is there limitation of methods?

come up with keywords and read carefully abstracts – what kind of study? Goals? Methods? Target participants? Results?

Find and list up 3 recent studies (2000~) which are mutually related, and discuss how they are related to each other. Also discuss what is unknown and what are the outstanding future research questions. After a final class presentation followed by class discussion, write all of these into a short essay.

Reading

- “An introduction to music therapy, theory and practice” Davis, Gfeller, & Thaut (Ed) 3rd edition. Chapter 4 “Music therapy with children and adults with intellectual disabling conditions”
- “An introduction to music therapy, theory and practice” Davis, Gfeller, & Thaut (Ed) 3rd edition. Chapter 6 “Music therapy with children and adults with physical disabilities”

Homework 7b:

From the reading, make a three-slide powerpoint about the specific target clinical population,

- what are the nature of conditions and comorbidities, and causes
- what are the available treatments and social resources
- what could be the goals of music therapy for this population?
- Should be presented on Nov 14, and uploaded by Nov 14, Thursday, 1pm.

Nov 12: Week 8a - No class

Nov 14: Week 8b

Presentation of Homework 7b ~ Project 2 development and assignment of individual reading.

Lecture: Pain, pre-/post- operative stress, depression and music therapy

Supplementary Reading

- "Music, Health, Well-being" Chapter 17. Pain & Chap 19. Pain management

<http://www.oxfordscholarship.com/view/10.1093/acprof:oso/9780199586974.001.0001/acprof-9780199586974>

Homework 8b

Make a summary of the individually assigned chapter related to the project 2 into a presentation. summary of the chapter presentation (To be decided according to the discussion – may be Autism (Ch. 5), Elderly (Ch.7), Behavioural Emotion disorders (Ch.8), NMT may be PD and stroke (Ch.10), Palliative care(Ch. 12) all from "An introduction to music therapy, theory and practice" Davis, Gfeller, & Thaut (Ed) 3rd edition.

- should be presented on Nov 19, and uploaded by Nov 19, Tuesday, 1pm.

Note: Week 9 is a special week to get individual consultation about Project 2. Book at least one 30-min time with the instructor during the week 9.

Nov 19: Week 9a

Presentation of Homework 8b

Project 2 update and assign the presentation slots on Dec 3 and 5.

No Homework other than developing Project 2. Presentation should be uploaded by the day of presentation, 1pm.

Nov 21: Week 9b

Guest lecture (TBA, Music therapy)

No Homework other than developing Project 2.

Nov 26 No class (thanks-giving)

Nov 28 No class (thanks-giving)

Dec 3: Week 10a

Presentation: Project 2

Description of the writeup

Dec 5: Week 10b

Presentation: Project 2

Wrapping up, Coffee/Tea

Homework 10b

Submit the essay writeup of Project 2. Due - Dec 10, Tuesday, 11:59pm.