



THE UCLA HERB ALPERT SCHOOL OF MUSIC



MUSIC MIND & BRAIN MUSIC INDUSTRY 103

SYLLABUS

SPRING TERM, 2012-2013 ACADEMIC YEAR

Professor: Mark Tramo, MD PhD

Location: Schoenberg Music Building, Room 1420

Time: April 3 - June 5, 2013, Wednesdays 6:30 – 9:30 PM

URL: <https://ccle.ucla.edu/course/view/13S-MUSIND103-1>



Site Map Search

[Schedule of Classes](#)
[General Catalog](#)
[Course Descriptions](#)

[Fees](#)
[Forms](#)
[Archives](#)

[FAQ](#)
[Calendars](#)
[Technology Services](#)

[SRWeb](#)
[CIMS](#)
[RSR](#)

Schedule of Classes

Spring 2013 MUSIC INDUSTRY

A per-unit Instructional Enhancement Fee is assessed on most undergraduate nontutorial classes. See the Miscellaneous Fee Chart at <http://www.registrar.ucla.edu/fees/> for fee amounts.

MUS IND 103 MUSIC AND BRAIN

[Catalog](#) [Definitions](#)

SEM 1 TRAMO, M.J.

[Course Webpage](#) [Library Reserves](#) [Textbooks](#)

ID Number	Type	Sec	Days	Start	Stop	Building	Room	Res't	#En	EnCp	#WL	WLCp	Status
403318200	SEM	1	W	6:30P	9:30P	SMB	1420		25	25	0	0	Closed

UPPER DIVISION COURSES**MUS IND 103. Music and Brain (4)**

Seminar, three hours/wk; outside study, nine hours/wk.

This seminar takes an interdisciplinary approach to understanding brain mechanisms mediating music perception, performance, and cognition. Students' natural interest in music serves as springboard for learning basic concepts about how brain works. The seminar focuses on specific themes such as harmony perception, production and performance, and emotion and meaning.

The course is designed to help students understand methodologies currently used to investigate mind-brain correlates. Fundamental principles in neurophysiology, psychophysiology, and neuroanatomy that are relevant to basic research in cognitive neuroscience and auditory neuroscience are emphasized. After two foundational lectures by Professor Tramo, student study-groups present key papers from the literature as a team. There will be guest professors from neuroscience, music, and the music industry. Every week, there are written homework assignments that are based on the lectures. The final examination is take-home based on the homeworks and lectures. There is letter grading based on attendance/punctuality (20%), homework score (30%), final exam score (30%), presentation/participation (20%).

Faculty

Mark Jude Tramo, MD, PhD

Director, The Institute for Music & Brain Science

Dept of Neurology, David Geffen School of Medicine at UCLA

Dept of Ethnomusicology, UCLA Herb Alpert School of Music

Email: mtramo@ucla.edu

URL: www.BrainMusic.org

Guest Faculty

Tom Sturges*

Executive VP/ Head of Creative

Universal Music Publishing, Santa Monica, CA

John Iversen, Ph.D.**

Neuroscience Professor

UCSD

Jonathan Berger, Ph.D. †

Denning Family Provostial Professor of Music

Center for Computer Research in Music & Acoustics

Stanford Institute for Creativity & the Arts

Stanford University, Palo Alto, CA

Prerequisites: None

Requirements:

ATTENDANCE

- Taken at the start of each class

READING

- Class notes
- Handouts

- Course website announcements, PDFs, etc
- Articles assigned from journals for presentations and reading:
 - go to The Institute for Music & Brain Science website, <http://www.BrainMusic.org>
 - on the Home Page, click on “Education”; there, click on “Institute’s eLibrary”
 - find the PDF using the author’s name(s) or title of the paper
 - download the PDF of the paper and read it.
- OR
 - go to the UCLA electronic library, search e-journals using the name of the journal the paper was published in
 - find the year, volume, and page number of the paper you want
 - download a PDF of the paper and read it.

HOMEWORK

- Weekly assignments with questions from material covered in lectures and seminars
- Must be completed and emailed to Professor Tramo *before* the start of class the following week

CLASS PARTICIPATION

- Attendance
- Active Participation, including answers and questions re: assigned reading
- One Seminar Powerpoint presentation of a professional journal publication as member of a weekly Seminar Study Section

FINAL EXAMINATION

- Take-home
- Will be posted on the course website or emailed to each student by Thurs **June 6th 11:59 PM.**
- Must be completed *independently* by each student and emailed back to Professor Tramo no later than Wed **June 12th 11:59 PM.**

Recommended books:

- *Harvard Dictionary of Music, 4th Edition*, Randel DM (Ed), 2003
- *Human Neuroanatomy*, 9th Ed. Carpenter M, 1996
- *Science of Sound, 3rd ed.* Rossing, T et al. 2001
- *Fundamentals of Hearing, 5th Ed.* Yost W. 2009
- *Oxford Handbook of Music Psychology*. Hallam et al. (ed) 2009
- *Auditory Neuroscience: Making Sense of Sound*. Schnupp et al (Eds) 2012
- *The Auditory Cortex*. Winer J & Schreiner C (Eds) 2011
- *Emotion and Meaning in Music*. Meyer, L. 1956

Lecture & Seminar Schedule

Each 3-hour class will be broken up into 3 blocks (~50 mins each) separated by 2 breaks (~10 mins each)

April 3

Introduction to Music Mind & Brain

- Course Overview
- Syllabus & Requirements
 - Learning Tools
- Functional Brain Organization in Relation to Emotion & Meaning in Music

April 10

Introductory Lectures I

- Review of Week I Reading & Homeworks
 - Human Neuroanatomy: Key Terms & Structures
- Conceptual Approaches to Understanding Mind-Brain Correlates
 - Experimental Methods for Studying Mind-Brain Correlates

APRIL 12 - Study List becomes official. LAST DAY:

1. To DROP impacted courses
2. To change Study List (add, drop courses) without fee through URSA
3. To enroll in courses for credit without late Study List fee through URSA
4. To check wait lists for courses through URSA
5. To file advancement to candidacy petition for master's degree with major department
6. To file graduate leave of absence with Graduate Division, Academic Services, 1255 Murphy Hall
7. To submit filing fee application to Graduate Division, Academic Services, 1255 Murphy Hall
8. To file undergraduate request for educational fee reduction with College or school
9. To declare bachelor's degree candidacy for current term (with fee depending on units completed--see "Degree Policies" in the Academic Policies section for details)
10. For full refund on textbooks with UCLA Store receipt (exception made with proof of drop or withdrawal up to eighth week)

April 17

Introductory Lectures II

- Pictures of Sound
- Digital Music Technology: Sound Recording, Analysis, & Editing
 - Psychoacoustics
- Western Music Theory

APRIL 19 – LAST DAY:

1. For all undergraduate students to ADD courses with per-course fee through URSA
2. For undergraduate and graduate students to file Late Study List with fee
3. Undergraduates approved for reduced tuition are audited (must be enrolled in 10 units or less to be eligible for reduction) as of this date

April 24

Seminar I: Pitch Perception

- Psychoacoustics of Pitch Perception: Simple Pitch vs. Complex Pitch
 - Neural Coding of Pitch by Auditory Neurons in the Ear & Brain
 - Functional Neuroanatomy: Cortical Lesion Effects

April 26 – LAST DAY:

1. For all undergraduates to DROP nonimpacted courses without a transcript notation (with per-transaction fee through URSA)
2. Undergraduate course materials fees are assessed based on enrollment on Friday of fourth week (see "Miscellaneous Fees")

May 1

Seminar II: Harmony Perception

- Neural Coding of Harmony by Auditory Neurons in the Ear & Brain
- Cerebral Lateralization: Split-Brain Studies of Harmony Perception

May 10 – LAST DAY:

Last day for undergraduates to change grading basis (optional P/NP) with per-transaction fee through URSA

May 8

Seminar III: Melody Perception

- Cognitive Psychology: The Magical Number 7 ± 2 & Memory for Melodies
 - Functional Neuroanatomy: Cortical Lesion Effects
 - Melody Recognition & Aging

May 15

Seminar IV: Rhythm Perception & Production**

- Psychophysics of Dance Movements
 - Functional Neuroanatomy: fMRI
- Neurophysiology: Cortical Magnetoencephalography

May 17 – LAST DAY:

For Letters and Science undergraduates to DROP nonimpacted courses with transcript notation and per-course fee through URSA

May 22

Seminar V: Emotion & Meaning in Music[†]

- Semiotics: Music vs. Language
- Psychophysiology: Chills, Thrills, & Subconscious Processing
 - Neurophysiology: Cortical Event-Related Potentials
 - Functional Neuroanatomy: PET and fMRI

May 29

Seminar VI: Music, Health & Medicine

- Effects of Music on Pain & Stress during and after Medical Procedures
 - Effects of Music on Movement in Parkinson's Disease

June 5

Seminar VII: Creativity & Talent*

- Gross Neuroanatomy: "Perfect" Pitch & Cortical Morphometry
 - Functional Neuroanatomy: fMRI
 - Psychopathology & Creativity
- Creativity in Songwriters, Rock Stars, & Everyday Life

June 7 – LAST DAY:

1. To withdraw.
2. For Letters and Science undergraduates to DROP nonimpacted courses by petition with instructor approval, per-course fee, and transcript notation
3. For graduate students to change grading basis (optional S/U) with per-course fee through URSA
4. For graduate students to ADD/DROP courses with per-course fee through URSA

June 10-14: FINAL EXAMINATIONS

END