Music

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Mark Dresser, M.A.
John W. Fonville, D.M.A.
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Philip C. Larson, M.M.
Philippe Manoury, Dip. Mus.
F. Richard Moore, Ph.D.
Susan Narucki, B.A.
János Négyesy, Dip. Mus.
Jann C. Pasler, Ph.D.
Miller S. Puckette, Ph.D.
Roger L. Reynolds, M.M.
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PROFESSORS EMERITI

Peter Farrell, M.M.
Edwin L. Harkins, Ph.D.
Cecil W. Lytle, B.A.
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MUSIC TECHNOLOGY DIRECTOR

Peter Otto, M.F.A., *Director (Lecturer)*
Tom Erbe, B.S., *Studio Director (Lecturer)*

OFFICE: Conrad Prebys Music Center
http://music.ucsd.edu

This department is dedicated to the development of musical intelligence and capacity, centering its quest on the music of our own time. The undergraduate programs intend to enhance the exercise and comprehension of the music-making process. The graduate programs aim to educate practitioners and researchers who can nourish the entire domain of music as well as extend its boundaries.

RESOURCES

PERFORMANCE/PRODUCTION OPPORTUNITIES

Performing in front of an audience is an essential part of the performance program; composers too must hear their works performed. Both performance and non-performance students are encouraged to participate in ensembles, festivals, and collaborative events. Practice facilities include grand pianos, disclaviers and uprights, an electronic keyboard lab, several harpsichords, a wide array of percussion instruments, a percussion studio, and instruments for student checkout.

Each academic year, more than 150 public concerts are presented in well-equipped venues: Mandeville Center Auditorium (792 seats), Mandeville Recital Hall (150 seats), Erickson Hall (150 seats), and Studio A (100 seats). Substantial resources and staffing are dedicated to performances of faculty and student works by new music ensembles, experimental and improvisational ensembles, student performance collectives (New Music Forum, Performers' Forum, and IS Forum), and at an annual graduate Spring Festival.

Our concert calendar can be viewed at http://music.ucsd.edu/events.

Ensembles in Residence

- Chamber Music Advanced
- Chamber Singers
- Concert Choir
- Gospel Choir
- Ensemble Realizations of Unconventionally Notated Scores
- Improvisation Ensemble
- Jazz Ensembles
- La Jolla Symphony and Chorus
- redfishbluefish
- Wind Ensemble
- World Music (Sitar & Tabla)
- Indian classical music

Visiting Artists/Artist in Residence

Visiting artists and artists in-residence play an integral part in research and collaborate with faculty and students in focus seminars, concerts, weeklong festivals, and colloquia, bringing an array of new creativity and ideas. Recent special events included Powering Up/Powering Down, an international festival of radical media arts, and the IS Intermedia Festival, featuring sound installation, performance, and critical theory.

Music Technology Facilities

The Department of Music maintains highly sophisticated, continuously upgraded facilities for the support of graduate and undergraduate instruction. http://music.ucsd.edu/facilities/

Computer Music Instructional Laboratory (CMIL)— Established in 1987 to support undergraduate and graduate studies in computer music, CMIL is a 900-square-foot facility with recessed storage and printing areas, machine isolation, acoustical treatments, a presentation console, ergonomic workstation components, a high-resolution data projection system, CD and DVD authoring, and integrated digital audio equipment for student access to audio processing, duplicating, high-definition digital mixing and high-quality (Dynaudio) multichannel audio monitoring. The facility provides adequate space for instrumental rehearsal and interfacing experimentation, and provides several FireWire interfaces for laptop computing. Mobile desktop systems optimized for live performance applications are also maintained in CMIL.

Our server has high-speed network and wireless connections, mass storage, and archiving systems. Intel and Macintosh computer workstations run unique music software packages developed at UC San Diego. Pd is a new, real-time, interactive musical and graphics programming environment written and under continuing development by Professor Miller Puckette. Other audio and graphics editing and processing software packages are also supported, including Pro Tools HD, development compilers, and several standard music-production packages. The facility is configured and optimized to support direct connection of musical instruments to computers for prototyping of real-time interactive performance and compositional projects using MAX/MSP/Jitter and Pd computer music software. The facility is also used for advanced seminars and classes in such topics as sound spatialization, music software programming, computer music techniques, repertoire analysis, and research.

Digital Music Project Studio—This is a 900-square-foot facility, including an isolation booth, absorption and diffusion treatments, data connections, and audio tie-lines to CMIL and Erickson Hall. The studio houses Macintosh and Linux systems and many dedicated devices for music production and recording, including a Pro Tools HD digital audio production package with sixteen channels of digital I/O for precise digital recording and editing. Recent upgrades include improved microphone preamps and an array of new software packages, including Waves plug-ins and convolution reverb. The studio features a Yamaha 02R96 digital mixing console with all upgrades, 5.1 and stereo monitoring, and sound-for-picture capabilities. The studio supports MIDI for synthesis, processing, and control in music composition and performance, and includes hardware and software for CD and DVD mastering.

Open Computing Laboratory (OCL)—This facility occupies 1,950 square feet, with audio and printer connections to CMIL and the Digital Music Project Studio. Most workstations are networked, and several stations are equipped with CD and DVD burning equipment. OCL was established in 1990 to support many facets of the department curriculum, and has been upgraded incrementally every year thereafter. It now comprises seventeen computer workstations (iMacs, desktop G4s and G5s, and several Intels), most with MIDI interfaces and

Yamaha SY22/33 synthesizers. Coda Finale, Max/MSP, Soundhack, Metasynth, DVD Studio Pro, Final Cut, Pd, Pro Tools, and IRCAM Forum are some of the packages supported in the lab. Large-format music and text printing are supported. For instructional presentation, the room features a high-quality data projection and surround sound system. The presentation station also features a PC workstation, a G5 Mac with Pro Tools editing, DAT, Bias Peak editor and SpectraFoo, signal display software, and DVD-authoring software burner.

Media Networking—All instructional labs and all of the Department of Music's performance spaces and classroom spaces have been upgraded for wireless and fast Ethernet and media networking. Media networking allows advanced students and researchers to "stream" digital video and audio among diverse on-campus facilities and onto the Internet. Additionally, there is wireless connectivity at most campus locations. All UCSD music production and research facilities are designed for ease of data portability and as complementary components of a powerful, well-designed, thoroughly integrated continuum of resources serving the needs of entering students through postdoctorate students and faculty researchers.

Music Technology Equipment Checkout—The music department maintains an inventory of technology equipment available to music majors and graduate students for overnight and weekend checkout. Equipment includes laptop computers with music software installed, FireWire audio interfaces, MIDI keyboards and interfaces, microphones, cables, and other recording and production sound equipment. This equipment is provided primarily to support class-related, dissertation, thesis and ICAM senior projects.

Concert Recording and CD Releases—All faculty and most student concerts are recorded by professional staff or their assistants, and qualified students can utilize the department's extensive high-tech resources for experimental projects resulting in public performance and recordings of new works. Regularly released CDs, under advisement by faculty mentors, feature advanced graduate students who perform, compose, edit, and collaborate to produce a snapshot of musical achievement that predicts distinguished careers and new avenues of musical thought and practice.

Music Center Studios—The Department of Music has a state-of-the-art recording and faculty research complex, completely refurbished in 2004-05, with studios designed to meet the following objectives:

- Serve as an unsurpassed facility for recording and mastering classical and contemporary music.

- Serve as a reference-critical listening space for the evaluation of audio production.

- Support faculty research in psychoacoustics, computer music, and digital signal processing (DSP) for audio.

The facility incorporates two large recording studios (50 x 60 feet) with variable wall and floor surfaces for diverse acoustical configurations, a control room (20 x 30 feet), an isolated machine room, and other support spaces. Music center studios host live performances as well as six-camera video shoots, and are well suited for high-tech presentations and concert recording. A 120-dimmer grid with a digital lighting board supports theatrical lighting for performance, and for television and video production.

The control room features highly refined acoustical qualities and new all-digital mixing and editing systems including Pyramix and Pro Tools HD. ATC monitoring systems have been upgraded for surround sound. An excellent range of microphones supports an unusual array of recording possibilities; a fine selection of pianos, percussion, and electronic instruments is also part of the holdings of the complex. Grad students may apply for staff positions and recording-project support at music center studios, and ICAM majors may apply for engineering and production internship credits. The department's instructional labs are designed to serve as networked, media-compatible satellites to the music center studios. http://music.ucsd.edu/facilities

Center for Research in Computing and the Arts (CRCA), and California Institute for Telecommunications and Information Technology (Calit2)

The Center for Research in Computing and the Arts (CRCA) is an organized research unit of UCSD. Historically rooted in the Center for Music Experiment (CME), CRCA now exists to foster collaborative working relationships among a wide array of artists, scientists, and technologists by identifying and promoting projects in which common research interests may be advanced through computing.

Music projects at CRCA cover a wide spectrum, from pure research to technically advanced creative endeavors. Current research includes, but is not limited to, interactive multimedia and performance, digital audio and synthesis techniques, video/image processing, spatial audio, computer music languages, virtual environments, robotics, computer composition, installation, artificial intelligence, and Web art.

CRCA offers a broad array of events in its facilities, reflecting the research and artistic expression of faculty, students, associates, and visiting scholars. Research residencies and fellowships are available for undergraduate and graduate students on an annual, competitive basis.

In fall 2005 CRCA moved into its new home in the Media Arts wing of UCSD's new Calit2 building. This impressive new structure houses offices, labs, and performance spaces on a world-class stage that places CRCA at the crossroads of artistic and technical innovation. CRCA affiliates work alongside leading researchers in the areas of wireless communications, computer imaging, signal processing, bioinformatics, chip design, immersive media, and a host of new and emerging disciplines. http://www.crca.ucsd.edu; http://www.calit2.net/

Music Library

The Music Library (located in Geisel Library) maintains extensive collections of materials in all areas of music, and is known internationally for contemporary music holdings. Ethnic music collections are aggressively being expanded. The Music Library's Services Room has fifty-two stations for playback of the recordings collection, including CD, DVD, VHS, LP, or tape formats. Ten of the remote control stations are equipped with video monitors. The Seminar Room is equipped with audio and video equipment for group presentations. Digital Audio Reserves (DAR) provides students with 24/7 access, including off-campus access, to course listening assignments, via the UCSD network. http://orpheus.ucsd.edu/music

THE UNDERGRADUATE PROGRAM

Undergraduate courses offered in the Department of Music satisfy a wide range of interests for non-music majors as well as for students majoring in music.

Students wishing to acquire a musical background to support further study should take MUS 1A-B-C, which develops skills musicians use in the analysis and performance of music. Students interested in "music appreciation" should choose from the following courses, which introduce aspects of the rich heritage of music: MUS 4–15. None of the aforementioned courses have prerequisites. For students with prior musical background who wish to continue in upper-division theory courses, MUS 2A-B-C (in lieu of 1A-B-C) is essential.

MUSIC MAJOR PROGRAMS

The undergraduate program at UCSD offers a bachelor of arts degree in music and in *music humanities*. The curriculum emphasizes the development of musical listening and performance skills as applied to both contemporary and traditional music. A third degree program, interdisciplinary computing in the arts (ICAM-music), is also offered.

The *music major* is intended for students who may choose to engage in music as a profession. This major thus requires extensive development of musical skills. A student without the appropriate level of those skills upon entrance to UCSD must devote considerable time to attaining them, either in lower-division courses or independent study. Students can concentrate in composition, performance, literature, technology, or jazz and the music of the African diaspora.

The Department of Music is committed to creative music making; thus all music majors are required to enroll in ensemble performance for at least three quarters (see #8 below).

The *music/humanities major* is intended for students who wish to pursue a broad liberal arts program that includes music as a central element. This program emphasizes music history and literature, and allows the individual student to select an area of interest for the major within the broad field of the humanities.

The interdisciplinary computing in the arts major is intended for students who wish to pursue the field of music specializing in the art and technology of our time. Below is a detailed description of this major.

MUSIC MAJOR REQUIREMENTS

The lower-division prerequisites for the music major are MUS 2A-B-C, and MUS 2AK-BK-CK. Jazz emphasis students take MUS 2JK in lieu of 2CK. To continue within the major, all students must pass Music 2C or an equivalent proficiency exam. Composition emphasis students must take Music 33A-B-C, Introduction to Composition I, II, and III,

or take a proficiency exam for the three-quarter sequence course. All required music major courses must be taken for a letter grade, with the exception of MUS 143, which is taken on a Pass/Not Pass basis. All courses to be counted toward satisfying the major requirements must be passed with a grade of C or better.

To complete the music major the following courses are required. Courses that are specific to each area of emphasis are shown in parentheses.

1. One of the following sequences:
   - MUS 101A-B-C (performance, composition, literature, and technology)
   - MUS 101A-B and 104 (jazz)
2. One of the following sequences:
   - MUS 102A-B-C (performance, composition, literature, and technology)
   - MUS 137A-B-C (jazz)
3. MUS 120A-B-C
4. One quarter of MUS 133 (normally taken in the winter quarter of the junior or senior year)
5. One of the following:
   - MUS 107, 110, 116, or 150 (performance, composition, literature, and technology)
   - MUS 150 (jazz)
6. One of the following:
   - three quarters of MUS 132 or 132V (performance)
   - MUS 103A-B-C (composition)
   - three courses from the series MUS 107-116, 126, 127A-B, and 150, of which at least one must be 107, 110, 116, or 150 [in addition to #5 above] (literature)
   - Music 170/171/175 (technology)
   - two courses from MUS 105, 126, 127A, and 127B; plus one course from MUS 107, 110, 111, 114, 115, 116, or 150 [in addition to #5 above] (jazz)
7. One additional course to be selected from
   - MUS 107-116, 126, 127A-B, and 150 (performance, composition, literature, and technology)
   - MUS 151-154 (jazz)
8. One of the following sequences:
   - Two quarters chosen from MUS 95C, 95D, or 95K and one quarter from MUS 95B-W, 130, 131, and 134 (performance, composition, literature, and technology)
   - Two quarters of MUS 95JC or 131, and one quarter of MUS 95C, 95D, 95G, or 95K (jazz)
9. 9. MUS 143 every quarter

MUSIC/HUMANITIES MAJOR REQUIREMENTS

The prerequisite for the music/humanities major is Music 1A-B-C (or 2A-B-C, if qualified). To complete the major the following courses are required:

1. MUS 120A-B-C
2. Three courses chosen from MUS 107-116, 126, 127A-B, and 150, of which at least one must be 107, 110, 116, or 150
3. A coherent set of six upper-division courses selected from the humanities or fine arts (including music) that focuses on a specific topic, chosen in consultation with the music/humanities academic advisor
4. Two quarters chosen from MUS 95C, 95D, or 95K, and one quarter from MUS 95B-W, 130, 131, and 134
5. MUS 143 every quarter

Students interested in this major should confer with the music/humanities faculty advisor to work out a course of study, which must be submitted at the beginning of the junior year for the advisor's written approval.

INTERDISCIPLINARY COMPUTING AND THE ARTS (ICAM) MAJOR

The Interdisciplinary Computing and the Arts major in the Departments of Music and Visual Arts draws upon and aims to bring together ideas and paradigms from computer science, art, and cultural theory. It takes for granted that the computer has become a metamedium and that artists working with computers are expected to combine different media forms in their works. All of this makes the program unique among currently existing computer art or design programs which, on the one hand, usually focus on the use of computers for a particular media (for instance, specializing in computer animation, or computer music, or computer design for print) and, on the other hand, do not enter into a serious dialogue with current research in computer science, only teaching the students off-the-shelf software.

The goals of the program are to
- prepare the next generation of artists who will be functioning in a computer-mediated culture
- give students necessary technical, theoretical, and historical backgrounds so they can contribute to the development of new aesthetics for computer media
- prepare students to mediate between the worlds of computer science and technology, the arts, and the culture at large by being equally proficient with computing and cultural concepts
- give students sufficient understanding of the trajectories of development in computing so they can anticipate and work with the emerging trends, rather than being locked in particular software currently available on the market.

Major Course Requirements

Twenty courses are required in the computing and the arts major for the attainment of the Bachelor of Arts degree. A minimum of twelve of these courses must be upper division.

All courses taken to satisfy major requirements must be taken for a letter grade, and only grades of C– or better will be accepted in the major.

MUS 4. Introduction to Western Music
VIS 1. Introduction to Art-Making
ICAM 40/VIS 40. Introduction to Computing in the Arts
Math. 20A. Calculus for Science and Engineering*
Math. 20B. Calculus for Science and Engineering*
CSE 11. Introduction to Computer Science: JAVA*
   and choose *one* from
MUS 1A. Musical Literacy

MUS 2A. Basic Musicianship
MUS 5. Sound in Time
   and choose *one* from
MUS 6. Electronic Music
MUS 7. Music, Science, and Computers
MUS 14. Contemporary Music
   *Math. 20A and Math. 20B is an accelerated calculus course for science and engineering. Math. 10A-B-C covers similar material in a non-accelerated format, and can be substituted. CSE 11 is an accelerated course in the JAVA programming language. CSE 8A and CSE 8B, which cover the same material in a non-accelerated format, may be substituted.

Upper-Division (twelve courses required)

Survey (one course required)

ICAM 110. Computing in the Arts: Current Practice

Foundation (three courses required)

ICAM 101/VIS 140. Digital Imaging: Image and Interactivity
ICAM 102/VIS 145A. Digital Media I: Time, Movement, Sound
ICAM 103/MUS 170. Musical Acoustics

Advanced (four courses required)

   Choose *one* from
MUS 172. Computer Music II
VIS 141B. Computer Programming for the Arts II
VIS 145B. Time- and Process-Based Digital Media II
VIS 147B. Electronic Technologies for Art II
   Choose *three* from
ICAM 120. Virtual Environments
ICAM 130/VIS 149. Seminar in Contemporary Computer Topics
MUS 171. Computer Music I
MUS 173. Audio Production: Mixing and Editing
MUS 174A-B. Audio and MIDI Studio Techniques
MUS 175. Musical Psychoacoustics
MUS 176. Music Technology Seminar
VIS 109. Advanced Projects in Media
VIS 131. Special Projects in Media
VIS 132. Installation Production and Studio
VIS 141A. Computer Programming for the Arts I
VIS 147A. Electronic Technologies for Art I
VIS 174. Media Sketchbook

Theory and History (two courses required)

ICAM 150/VIS 159. History of Art and Technology
   and choose *one* of
MUS 111. World Music Traditions
MUS 114. Music of the Twentieth Century
MUS 175. Musical Psychoacoustics
VIS 123CN. Early Print Culture: The First Media Revolution
VIS 125E. History of Performance
VIS 150. History and Art of the Silent Cinema
VIS 151. History of the Experimental Film
VIS 152. Film in Social Context
VIS 153. The Genre Series
VIS 154. Hard Look at the Movies
VIS 155. The Director Series
VIS 156N. Special Problems in Film History and Theory
VIS 157. Video History and Criticism
VIS 158. Histories of Photograph

VIS 194S. Fantasy in Film

Senior Project (two courses required)

ICAM 160A. Senior Project in Computer Arts I
ICAM 160B. Senior Projects in Computer Arts II

All Computing and the Arts (ICAM) course descriptions are listed at the end of the lower- and upper-division sections under "Courses." Not all courses are offered each year.

Recommendations for Transfer Students

Transfer students should attempt to complete the following lower-division courses before transferring to UCSD: CSE 11 (or CSE 8A/8AL/8B), Math. 20A-B (or Math. 10A-B-C), and MUS 4. Go to http://www.assist.org. ASSIST is an online student-transfer information system that shows how course credits earned at one public California college or university can be applied when transferred to another. ASSIST is the official repository of articulation for California's public colleges and universities and provides the most accurate and up-to-date information about student transfer in California.

Students should also be able to find courses equivalent to MUS 1A, 6, and 14 at some colleges. While some of these may be listed on ASSIST, transfers should be prepared to provide course descriptions, syllabi, and/or other materials that may be required to determine the content of the courses taken at other institutions.

Transfers entering with thirty-six or more quarter units by their third quarter of study at UCSD should complete their remaining lower-division courses for the major by the end of the third quarter.

HONORS

1. To be admitted into the honors program a student must have the following:

   - Excellence in a specific subject matter (performance, composition, literature, technology, jazz and music of the African diaspora, or music/humanities) and faculty support.
   - Performers must have previously performed at Undergraduate Performers Forum and enrolled in Chamber Music, MUS 130. (Vocalists can seek an exception.) Other students must have completed all Music 95 requirements prior to entering the honors program. Jazz and music of the African diaspora students must have performed, or had their compositions performed, at the Undergraduate Performers Forum.
   - A GPA in the Department of Music of 3.6; an overall GPA of 3.0
   - All of the requirements below must be completed before the last day of instruction in the spring quarter prior to the academic year in which the student proposes to pursue an honors curriculum.
   - Performance students must present a piece before the performance faculty that demonstrates their technical and musical abilities. In addition, students must provide a proposed program for an honors recital.
   - Composition students must have a composition performed on the New Music Forum

series. Either the student's principal instructor must attend this performance or a tape of this performance must be provided for faculty review. In addition, students must provide a proposed portfolio of original scores for an honors recital.
   - Literature students who have (1) presented historically or musicologically oriented research papers at campus venues featuring undergraduate research, or (2) been involved in the faculty mentor program, or (3) participated in the presentation of the winter opera with the accompanying symposium, may submit a portfolio of papers to the Integrative Studies faculty. In addition, students must propose a fifty minute lecture for the Department Seminar (MUS 143).
   - Music science and technology students must present a portfolio of projects to the music technology faculty and propose a fifty-minute lecture/demonstration for the Department Seminar (MUS 143).
   - Jazz and music of the African diaspora students must perform a piece before the faculty that demonstrates their compositional and improvisational abilities. In addition, students must provide for evaluation a portfolio of three original recordings and a proposed program for an honors recital.

2. Once admitted to the honors program

   - Students must be supervised by a faculty advisor throughout the honors program.
   - Composition students admitted to the honors program will enroll in twelve units of the Composition Honors course (MUS 103D-E-F). Performance students will enroll in twelve units of MUS 132R (after at least three quarters of MUS 132). Technology students will enroll in twelve units of MUS 176 or 199; Music literature and music humanities students will enroll in twelve units of MUS 199, 150, or 107. Jazz and music of the African diaspora students will enroll in twelve units of 137D, 137E, and 137F (Honors Seminar in Jazz Studies I, II, III).

3. To receive honors

   - A student must publicly demonstrate an appropriate level of excellence, an acceptable GPA, and suitable participation in department presentations and seminars, as determined by the student's honors committee.
   - Jazz and music of the African diaspora students will have a recital in the spring quarter of their senior year. The recital will include a program of a minimum of 50 percent of original compositions.

Please note: Being admitted to the honors curriculum does not guarantee that a student will receive honors.

For further information on the Department of Music Honors Program and to obtain an application form, students should make an appointment with the undergraduate staff advisor.

TRANSFER STUDENTS

Students who plan to transfer into the music major should have strong skills in basic musicianship. For those planning to emphasize performance, solid

proficiency on the instrument is required. A general course in the history of music is recommended. All transfer students must pass a proficiency examination in MUS 2C (Basic Musicianship) and MUS 2CK (Basic Keyboard) or take the two sequence courses. To verify the acceptability of transfer music courses, students must make an appointment with the undergraduate staff advisor.

MINOR PROGRAMS

Please obtain a Department of Music brochure of approved minors from the undergraduate office. Students must seek advice and obtain approval from the undergraduate advisor prior to embarking upon a minor program.

The music minor for students entering UCSD in and after winter quarter 1998 consists of

- two lower-division music courses except performance ensembles (Music 95B– Music 95W) and lessons (Music 32)

- five upper-division music courses

- Students who entered UCSD before winter 1998 may select either the new minor or one of the music minors offered at the time of their entry into the university.

A minor with an emphasis in ICAM consists of seven specific courses, of which at least five must be upper division. Prospective minors should consult with the respective departmental advisor for a complete list of appropriate classes acceptable for the minor.

ADVISING OFFICE

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THE GRADUATE PROGRAM

UC San Diego offers the master of arts and doctor of philosophy in music as well as a doctor of musical arts. Areas of emphasis for the M.A. include Composition, Computer Music, Integrative Studies, and Performance. For the Ph.D., areas of emphasis offered are Composition, Computer Music, and Integrative Studies. The doctor of musical arts has an emphasis in Contemporary Music Performance.

COMPOSITION

http://music.ucsd.edu/grad/composition.php
The Composition Program is committed to nourishing the individual gifts and capacities of student composers in a diverse and active environment, with an emphasis on intensive personal interaction between faculty and student. The faculty mentor considers a student's particular goals and then attempts to strengthen his or her technical capacity to meet them. The diversity and liveliness of our program itself often challenges students to reevaluate their goals.

An incoming member in the M.A. or Ph.D. program begins with a year-long seminar (taught by a different faculty composer each quarter) and

continues with individual studies thereafter. At the close of the first year fall quarter and again after the following spring quarter, the entire composition community gathers for a day-long "jury." Each seminar member is allotted a block of time during which the composition that has just been completed is performed and recorded in a carefully rehearsed presentation. There is a detailed discussion of each work by the faculty composers, and the student has opportunity to comment, explain, and pose questions. Following the performance and discussions of this day, the composition faculty meets to assess the students' work collectively and to offer any guidance deemed necessary. This process is at the root of the uniqueness of the UC San Diego program, and manifests the range, seriousness, and vitality with which compositional issues are explored here.

After completing three quarters of seminar and two juries, students come to know something about the ideas and perspectives of each faculty composer; the faculty, in turn, is aware of each student's objectives and needs. At this point, an individual mentor is agreed upon and this relationship becomes the center of the student's continuing work as the degree is completed. A Third Year Forum presents, under departmental auspices, a work composed by each third-year Ph.D. composer in the four quarters since his or her second jury. As a part of preparation for this forum, each student composer is expected to have a faculty performer on his or her Ph.D. committee (as a regular member, or as an additional sixth member). The faculty performer is the student's performance mentor and guide in interfacing with the performance community. There is also a biweekly Focus on Composition Seminar at which faculty, students and selected visitors present work of interest (compositional, analytical, technological, and even whimsical).

The seminars serve to foster mutual awareness within the student composer group. Collegial relationships develop which lead not only to friendships but also to further creative outlets in cooperative projects, including the student-run Composers' Forums, performance collectives, and recital projects. UCSD performers—faculty and student— are all committed to the playing of new music, and frequent composer/performer collaborations are a vital aspect of life in the Department of Music.

COMPUTER MUSIC

http://music.ucsd.edu/grad/comp_music.php

The Computer Music Program emphasizes research in new techniques for electronic music composition and performance, catalyzed through an active concert program of new works by students, faculty, and visitors. Areas of research include

- new audio synthesis techniques
- audio signal processing
- music cognition
- live improvisation with and by computers
- integrating audio and video
- electronic spatialization of sounds
- techniques for live electronic music performance
- computer music software and HCL design

- audio analysis and feature detection

The Computer Music Program encourages work which overlaps with the other programs of study: Composition, Performance, and Integrative Studies. Analyzing and performing electronic music repertoire as well as writing new music involving electronics are encouraged.

The first-year computer music curriculum is centered on a yearlong "backbone" course covering the essentials of the computer music field. This material divides naturally into three portions (audio signal processing, compositional algorithms, and musical cognition).

In their second year, students work individually with faculty members to deepen their mastery of their subject areas of concentration. For example, a student wishing to focus on signal processing aspects might study techniques for digital audio analysis and resynthesis, drawing on the current research literature.

Also during these first two years, students take seminars on music analysis, composition, and performance practice. After having taken a critical mass of such subjects, Ph.D. students enter a qualifying examination preparation period, and, once successful, they start their dissertation research.

UCSD's Center for Research in Computing and the Arts (http://crca.ucsd.edu) offers an ideal research environment for graduate students in this area. The Department of Music also provides extensive laboratory and computing support for computer music.

INTEGRATIVE STUDIES

(formerly Critical Studies/Experimental Practices)
http://music.ucsd.edu/grad/is.php

The graduate program in Integrative Studies (IS) promotes an engagement with contemporary music activity and discourse that integrates diverse methodologies, experiences, learning styles, and resources. IS respects multiple ways of knowing and seeks to explore connections among ideas and processes in the arts, humanities, and sciences. Students are encouraged to combine their artistic and academic pursuits; to think systematically, critically, and reflectively; and to focus on the articulations and points of overlap between specialized and generalized knowledge. Drawing on diverse fields, including cultural theory, new media studies, ethnomusicology, improvisation, cognitive science, and systems theory, among others, the IS program combines an exploration of contemporary Western and non-Western music making with an examination of ideas and concepts that are relevant to its nature, creation, production, and reception.

This integrative and interactive environment encourages cross-fertilization and hybridity between diverse musical forms and the theoretical and critical discourses that surround them, often drawing in those who may not fit categories of "composer" or "performer," or those whose work is not constrained by traditional disciplinary boundaries. Core seminars explore multiple ways of thinking about music—including critical, cognitive, and intercultural approaches—in tandem with creative practices that frequently incorporate new technologies and integrate diverse media and forms. Student-generated projects and collaborations are encouraged and

promoted with formal juries conducted by the faculty.

The program comprises four interconnected specialties: critical studies, ethnomusicology, systems inquiry, and creative practice. IS graduate students initially enroll in introductory courses taught by core faculty members designed to present an overview of each specialty and to generate possibilities for future independent and collaborative research. In subsequent quarters students choose between a variety of focused and revolving topic seminars in each of the four primary specialties. By the end of their first year in residency, students declare a primary and secondary specialty within the program. Seminars offered in other departments—for instance in visual arts, literature, theatre and dance, anthropology, communication, ethnic studies, cognitive science, psychology, or computer science—are encouraged and may fulfill degree requirements, if approved by a student's faculty advisor.

Exposure to a range of disciplines and interdisciplinary methods prepares students to pursue innovative artistic/academic projects and careers. The program teaches students to situate and contextualize knowledge and practices on a broad intellectual and artistic continuum and to recognize the responsibilities and opportunities associated with living in an increasingly interconnected and interdependent world.

PERFORMANCE

http://music.ucsd.edu/grad/performance.php

Fostering the creative, intelligent, and passionate performance of contemporary music is the mission of the Performance Program of the Department of Music. As once stated by founding faculty composer Robert Erickson, we at UCSD are a "community of musicians."

Performers act and interact in a communal environment by means of collaboration with faculty and student composers, research in the areas of new performance modalities, music technology, and improvisation, among many other pursuits. The performance of contemporary music is viewed as a creative act that balances expertise and exploration.

Graduate performance students pursue either a master of arts or a doctor of musical arts degree in contemporary music performance. The course of study for both programs involves the completion of required graduate seminars and intensive study with a mentoring faculty member. Students are encouraged to adopt a vigorous, exploratory orientation in their private study. Final degree requirements include a recital, or in the case of the DMA, two recitals and the presentation of personal performance research.

The work of graduate performance students forms an integral component of a rich musical environment, which produces an astonishing quantity and variety of performances. Students may perform in collaborative performances with fellow students and faculty. Ensembles include groups specializing in the interpretation of unconventionally notated scores, the percussion group red fish blue fish and other ensembles. The Performance Forum, a student-initiated concert series, provides an opportunity for students to present a wide variety of repertoire which may include improvised music, world music,

and music with technology. A strong, collaborative spirit among the curricular areas of the department (Performance, Composition, Music Technology, and Integrative Studies) also yields many new projects each year. Works by graduate student composers are performed on the annual Spring Festival and other concert series. The sense of musical community engendered by diverse interactions permeates the atmosphere and makes the Department of Music at UCSD a uniquely rewarding place to create the newest of music. Graduate Admissions

Students are admitted to begin in fall quarter only. The deadline for submission of ALL application materials is January 10. Failure to meet this deadline jeopardizes admission and financial support.

Step 1 Preliminary Application

The application process begins at the Department of Music Web site (http://music.ucsd.edu) with a preliminary online application. We encourage all applicants to apply as early as September.

Step 2 Portfolio

Music applicants must submit a portfolio consisting of the following by January 10 to: UCSD, Department of Music, MC 0099, La Jolla, CA 92093. Please include your most recent works as well as twentieth-century pieces, when possible.

- For *all* applicants, a repertory list of works (solo and chamber) performed or composed during the past few years and a sample of printed concert programs in which you have participated, either as performer, composer, or collaborator.

- For *all* applicants, a minimum of two papers illustrating writing ability in any of the following areas: musical analysis, criticism, aesthetics, music theory, or music technology.

- In addition,

- For *composition* applicants only, a minimum of three scores of instrumental works with taped examples of the works being performed. (These may include, but should not be exclusively, electroacoustic works.)

- For *computer music* and *IS* applicants only, representative documentation (e.g., papers, performances, intermedia works, computer programs, etc.) of prior work.

- For *performance* applicants only, tapes or CD demonstrating the level of vocal and/ or instrumental performance. In person auditions are desirable when possible, but not required.

Step 3 UCSD Application for Graduate Admission

All sections of the official online UCSD Application for Graduate Admission with the $70 nonrefundable fee, or $90 for international students, must be submitted by January 10. Applications must include all supporting documents:

- statement of purpose

- three letters of recommendation

- official transcripts

- Graduate Record Examination (GRE) required for *all* applicants.

- TOEFL (Test of English as a Foreign Language) or International English Language Testing System (IELTS) required for all applicants whose country of citizenship does not have English as its primary language. Minimum TOEFL score is 550 for the paper-based test, 213 for the computer-based test, or 80 for the Internet-based test. The minimum IELTS score is 7.

ADVISORY EXAMINATIONS

After completion of an advisory examination during Welcome Week, each new student will meet with the departmental M.A. or Ph.D. advisor. Students found to be deficient in any areas covered on the advisory examination (dictation, sight reading, keyboard proficiency, history, and literature) will be advised to remedy deficiencies during their first year.

CORE GRADUATE CURRICULUM

All graduate students are required to take Music 201 (Projects in New Music Performance) as outlined under each area, Music 210 (Musical Analysis), Music 228 (Conducting), and Music 291 (Problems and Methods of Music Research and Performance). Students who completed Music 210, 228, and 291 during their master's degree program at UCSD, do not need to retake those courses for their doctoral curriculum.

To assure that all requirements are being adequately met, all graduate students must make an appointment with the graduate staff advisor for a degree check no later than the winter quarter of the second year.

MASTER'S DEGREE PROGRAM

The master of arts in music degree includes areas of emphasis in *Composition, Computer Music, Integrative Studies*, and *Performance*. The degree requires completion of at least thirty-six quarter units of graduate courses (courses numbered 201–299), including six units of Music 500 (Apprentice Teaching in Music) and six units of Music 299 (Advanced Research Projects and Independent Study) bearing directly on completion of the master's thesis. Master's students are expected to complete all requirements for the degree in six quarters of residence.

COURSE REQUIREMENTS

In addition to the core graduate curriculum, all master's degree students are required to complete requirements in their area of emphasis:

Composition

- MUS 201 (A, B, C, D, E, or F)—must take at least two times.

- MUS 203A-B-C—successful completion of the jury process is necessary to get a passing grade in the corresponding seminar.

- MUS 203D—after successful completion of 203C, students must enroll in Music 203D (with their committee chair) every quarter until graduation.

- MUS 204—every quarter until graduation.

- MUS 206 and/or 207—a combination of any two courses.

Computer Music

- MUS 201 (A, B, C, D, E, or F)—must take at least two times.

- MUS 270A-B-C—must take within the first year of the program.

- MUS 270D—required every quarter of the second year.

- MUS 206, 207, and/or 267—a combination of any two courses.

- Integrative Studies

- MUS 201 (A, B, C, D, E, or F)—must take at least one time.

- MUS 205—every quarter until graduation.

- MUS 206 or 207—at least three courses; two approved for a student's primary specialty and one approved for his or her secondary specialty.

- MUS 211, 212, 213, and 214—must complete the series of four courses within the first year of the program.

- MUS 251, 252, 253, or 254—at least once course corresponding to the student's primary specialty. Additional courses from this series may also be taken for corresponding 206 or 207 credit if approved by the student's faculty advisor.

It is the student's responsibility to check if a given course will count towards his or her primary or secondary specialty prior to enrolling.

Performance

- MUS 201(A, B, C, D, E, or F)—every quarter until graduation.

- MUS 206 or 207—a combination of any two courses.

- MUS 232—every quarter until graduation.

- MUS 245—every quarter in residence.

MASTER'S DEGREE COMPLETION REQUIREMENTS

A folio of *three research papers* in professional format (normally to be written in connection with the courses the student will be taking) must be accepted by the student's committee prior to approval of the thesis.

MA candidates will present a *thesis* consisting of the following under the supervision of the student's committee chair in MUS 299:

- Candidates emphasizing *Composition* will prepare a folio of three chamber compositions together with tape recordings of at least two of them.

- Candidates emphasizing *Computer Music* will write a research paper (thesis) and present a lecture-performance in which the scientific, technological, and musical aspects of an original computer music composition are documented, played, and discussed.

- Candidates emphasizing *Integrative Studies* with a primary specialty in critical studies, ethnomusicology, or systems inquiry must complete a master's thesis of roughly sixty pages.

- Candidates emphasizing *Performance* will present a recital supported by lecture-quality notes. The program must be approved by the student's committee chair.

All of the above master's requirements must have final approval from the student's individual committee upon completion.

DOCTORAL DEGREE PROGRAM

Students of superior musical competence may pursue a program with emphasis in *Composition, Computer Music,* or *Integrative Studies* leading to the Ph.D. or doctor of musical arts (D.M.A.) degree in *Contemporary Music Performance.*

All doctoral students within the Department of Music must complete the Core Graduate Curriculum (outlined in the section above the Master's Degree Program) plus additional core requirements for the Ph.D. or D.M.A. program. These additional core requirements are

- Successful completion of an M.A. degree, including requirements equivalent to those described above for the M.A. in music. UCSD M.A. students who apply to the Ph.D./D.M.A. program must complete all departmental requirements, obtain OGS approval, and file the M.A. degree at Geisel Library *before* enrolling in any Ph.D./D.M.A. level courses.

- The Department of Music strongly recommends that entering students have acquired a reading ability in at least one of the standard reference foreign languages (French, German, Italian, or Spanish) in addition to their native language.

- All Ph.D./D.M.A. students are required to complete six units of credit in Music 500 (Apprentice Teaching) unless the student has completed this requirement in UCSD's master's degree program.

- After completing the qualifying examination, all students must remain in residence for at least three quarters, during which time they must enroll in twelve units of Music 299 (Advanced Research Projects and Independent Study) with their committee chair or members every quarter.

COURSE REQUIREMENTS

In addition to the core graduate and Ph.D./D.M.A. curriculum, doctoral students (according to their area of emphasis) must complete the following courses prior to the qualifying examination:

Composition

- MUS 201 (A, B, C, D, E, or F)—must take at least two times.

- MUS 203A-B-C—successful completion of the jury process is necessary to get a passing grade in the corresponding seminar. Continuing students from the UCSD Composition M.A. program may be excused from MUS 203B-C by successfully completing MUS 203A at the Ph.D. level.

- MUS 203D—after successful completion of 203C,

students must enroll in MUS 203D (with their committee chair) every quarter in residence.

- MUS 204—every quarter in residence.

- MUS 206 and/or 207—a combination of any three courses.

- MUS 209—must be taken at least three times.

- MUS 298—must complete at least six units.

Computer Music

- MUS 201 (A, B, C, D, E, or F)—must take at least two times.

- MUS 270A-B-C—must be taken within the first year of the program unless previously taken as a UCSD M.A. student.

- MUS 270D—after successful completion of 270C, students must enroll in MUS 270D (with their committee chair) every quarter in residence.

- MUS 206, 207, 209, and/or 267—a combination of any six courses.

- MUS 298—must complete at least six units.

Integrative Studies

- MUS 201 (A, B, C, D, E, or F)—must take at least two times.

- MUS 205—every quarter until advanced to candidacy.

- MUS 206 or 207—at least five courses with three approved for a student's primary specialty and two approved for his or her secondary specialty.

- MUS 211, 212, 213, and 214—entire series must be taken within the first year of the program unless previously taken as a UCSD M.A. student.

- MUS 251, 252, 253, or 254—must take two courses, one to correspond with student's primary specialty and one to correspond with the student's secondary specialty; additional courses from this series may also be taken for corresponding 206 or 207 credit if approved by the student's faculty advisor.

- MUS 298—must complete at least six units.

Those students declaring creative practice as their primary specialty for the Ph.D. are required to pass a jury at the end of their first year of doctoral study. Each student is allotted a block of time to present and/or perform his or her work in front of a panel comprising area and affiliated faculty. Each presentation is followed by a detailed discussion of the student's work at which students have the opportunity to comment, explain, and pose further questions. After the completion of the jury process, the faculty meets in order to further assess each student's work and to offer additional guidance.

It is the student's responsibility to check if a given course will count towards his or her primary or secondary specialty prior to enrolling.

Performance

- MUS 201(A, B, C, D, E, or F)—every quarter until completion of qualifying examination.

- MUS 206/207/209—as approved by D.M.A. advisor, a combination of any six seminars related to the primary and secondary area of specialization. Music 296 may be substituted for up to four seminars with permission of D.M.A. advisor.

- MUS 232—every quarter until completion of qualifying examination.

- MUS 245—every quarter in residence.

- MUS 250—must be taken at least three times.

- MUS 298—must complete at least six units.

QUALIFYING EXAMINATION/ ADVANCEMENT TO CANDIDACY

Requirements prior to taking the qualifying examination:

- Completion of all Ph.D./D.M.A. required course work.

- Formation of the Doctoral Committee. Students must choose the chair of their Doctoral Committee no later than their last quarter of course work. They must choose two more internal members of the Doctoral Committee by the end of the fall quarter of their third year. In consultation with the chair of the Doctoral Committee, two faculty members from outside the department should be added to the committee by the end of the spring quarter of the third year. All internal members of the committee must be faculty of the Department of Music. The final composition of the committee is approved by the Office of Graduate Studies.

- For Ph.D. students, one research paper judged to be of publishable quality must be completed prior to qualifying examinations. The subject of the publishable paper will be developed during the student's first two years and must be approved by the student's Ph.D. committee chair.

- For Composition students, in addition to the publishable paper, a folio of not fewer than three compositions (not previously accepted for an M.A. degree) must be completed prior to qualifying examinations. A Third Year Forum presents, under departmental auspices, a work composed by each third-year Ph.D. composer in the four quarters since his or her second jury. As a part of preparation for this forum, each student composer is expected to have a faculty performer on his or her Ph.D. committee (as a regular member, or as an additional sixth member). The faculty performer is the student's performance mentor and guide in interfacing with the performance community.

- For D.M.A. students, one major recital; plus either (a) an abstract of the thesis or research project which will be given to the Doctoral Committee at the qualifying examination; or (b) a substantial portion of the works from the student's first two "major recitals" will be presented at the qualifying examination.

- For Integrative Studies students, a dissertation prospectus must be submitted to the student's committee no later than three weeks prior to the oral portion of the qualifying examination. The

dissertation prospectus is a document that presents the research topic of the dissertation, places it in the context of the relevant literature or in the context of recent artistic developments, discusses its significance, specifies and justifies the research methods, theoretical orientation, and/or artistic approach, and indicates the anticipated steps leading to completion.

The qualifying examination for all doctoral students will consist of the following:

A written and oral defense of three questions provided by the Doctoral Committee pertaining to appropriate areas of specialization. For Integrative Studies students, one question will involve a defense of the student's dissertation prospectus and the remaining two questions will pertain to the student's primary and secondary specialties.

Successful completion of the qualifying exam marks the student's advancement to doctoral candidacy, which must take place no later than the end of the spring quarter of the fourth year.

PH.D./D.M.A. DEGREE COMPLETION REQUIREMENTS

- For *Composition* students, completion of a major composition project.

- For *Computer Music* students, completion of an acceptable dissertation.

- For *Integrative Studies* students with a primary specialty in ethnomusicology, systems inquiry, or critical studies, completion of a book-length dissertation demonstrating original research and critical insight. For Integrative Studies students with a primary specialty in creative practice, a major creative work and a written defense of that work. Prior to the dissertation defense, the student's work must be reviewed by a faculty jury and performed publicly (see the description of the jury process given above for more details).

- For D.M.A. students, completion of a second major recital plus one of the following: (a) thesis or research project; (b) a concert that is innovative in design and/or content and which is supported by a document containing extensive stylistic or analytical discussion of the program; (c) a lecture/concert pertaining to innovative and/or original material, with appropriate documentation as determined by the committee; or (d) two approved chamber music concerts, with appropriate documentation as determined by the committee.

- For all doctoral students, a final public defense of the composition/dissertation/recitals.

- A full copy of the student's dissertation/research project must be in the hands of each of the student's Doctoral Committee members four weeks before the dissertation defense.

- It is understood that the edition of the dissertation given to committee members will not be the final form, and that the committee members may suggest changes in the text at the defense. Revisions may be indicated and, in extreme cases, may require this examination to be taken more than once.

- Acceptance of the dissertation by the university librarian represents the final step in completion of all requirements for the Ph.D.

Materials previously submitted for other degrees are not acceptable for submission for the Ph.D./D.M.A. degree.

TIME LIMIT POLICY FOR THE DOCTORAL DEGREE

Normative Time Limits

4 years: Students entering the Ph.D./D.M.A. program with a master's degree from another institution.

6 years: Students continuing into the Ph.D./D.M.A. program with a master's degree from UCSD. Time limit is calculated from the beginning of the M.A. program (i.e., two years for M.A. program plus four years normative time for Ph.D./D.M.A.).

Support Time Limits

6 years: Students entering the Ph.D./D.M.A. program with a master's degree from another institution.

7 years: Students continuing into the Ph.D./D.M.A. program with a master's degree from UCSD. Time limit is calculated from the beginning of the M.A. program.

Total Registered Time Limits

6 years: Students entering the Ph.D./D.M.A. program with a master's degree from another institution.

8 years: Students continuing into the Ph.D./D.M.A. program with a master's degree from UCSD. Time limit is calculated from the beginning of the M.A. program.

Students who have not completed all Ph.D. requirements within the maximum total registered time will no longer be permitted to register for classes.

ADVISING OFFICE

Graduate Staff Advisor
Diana Platero
Room 197, Conrad Prebys Music Center
(858) 534-3279
E-mail: dplatero@ucsd.edu

COURSES

For course descriptions not found in the UC San Diego General Catalog, 2010–11, please contact the department for more information.

Note: The following course offerings outline the general scope of our program. Not all courses are offered every year. It is essential that students work closely with departmental advisors when planning their degree programs.

LOWER-DIVISION

1A. Fundamentals of Music A (4)
This course, first in a three-quarter sequence, is primarily intended for students without previous musical experience. It introduces music notation and basic music theory topics such as intervals, scales, keys, and chords, as well as basic rhythm skills. **Prerequisites:** none.

1B. Fundamentals of Music B (4)
This course, second in a three-quarter sequence, focuses on understanding music theory and in developing musical ability through rhythm, ear training, and sight singing exercises. Topics include major and minor scales, seventh-chords, transportation, compound meter and rudiments of musical form. **Prerequisite:** Music 1A.

1C. Fundamentals of Music C (4)
This course, third in a three-quarter sequence, offers solid foundation in musical literacy through exercises such as harmonic and melodic dictation, sight singing exercises and rhythm in various meters. Topics include complex rhythm, harmony, and basic keyboard skills. **Prerequisite:** Music 1B.

2A-B-C. Basic Musicianship (4-4-4)
Primarily intended for music majors. Development of basic skills: perception and notation of pitch and temporal relationships. Introduction to functional harmony. Studies in melodic writing. Drills in sight singing, rhythmic reading, and dictation. **Prerequisites:** passing score on placement exam. Must be taken in sequence. Music majors must be concurrently enrolled in Music 2AK, 2BK, and 2CK (Basic Keyboard).

2AK-BK-CK. Basic Keyboard (2-2-2)
Scales, chords, harmonic progressions, transposition, and simple pieces. **Prerequisites:** concurrent enrollment in Music 2A, B, C.

2JK. Jazz Keyboard (2)
This course will introduce basic voicings and voice leading, stylistically appropriate accompaniment, and basic chord substitution. For majors with a Jazz and the Music of the African Diaspora emphasis taken concurrently with Music 2C. **Prerequisites:** Music 2AK and 2BK or passing proficiency exam, or consent of instructor. Concurrent enrollment in Music 2C. Majors only.

4. Introduction to Western Music (4)
A brief survey of the history of Western Music from the Middle Ages to the present. Much attention will be paid to the direct experience of listening to music and attendance of concerts. Class consists of lectures, listening labs, and live performances. **Prerequisite:** none.

5. Sound in Time (4)
An examination and exploration of the art and science of music making. Topics include acoustics, improvisation, composition, and electronic and popular forms. There will be required listening, reading, and creative assignments. No previous musical background required. **Prerequisite:** none.

6. Electronic Music (4)
Lectures and listening sessions devoted to the most significant works of music realized through the use of computers and other electronic devices from the middle of this century through the present. **Prerequisite:** none.

7. Music, Science, and Computers (4)
Exploration of the interactions among music, science, and technology, including the history and current development of science and technology from the perspective of music. **Prerequisite:** none.

8. American Music (4)
A course designed to study the development of music in America. The focus will be on both the vernacular traditions including hymn singing, country music, jazz, big band, rock, etc., as well as the cultivated traditions of various composers from William Billings to John Cage. **Prerequisite:** none. (Offered in selected years.)

9. Symphony (4)
The symphonic masterworks course will consist of lectures and listening sessions devoted to a detailed discussion of a small number of recognized masterworks (e.g., Mozart, Beethoven, Berlioz, Stravinsky, Ligeti, etc.). **Prerequisite:** none. (Offered in selected years.)

10. Chamber Music (4)
Chamber Music will consist of lectures and listening sessions devoted to a detailed discussion of recognized

chamber masterworks (e.g., Haydn, Mozart, Beethoven, Bartok, etc.). **Prerequisite:** none. (Offered in selected years.)

11. Folk Music (4)
A course on folk musics of the world, covered through lectures, films, and listening sessions devoted to detailed discussion of music indigenous to varying countries/areas of the world. Topics vary from year to year. May be repeated once for credit. **Prerequisite:** none.

12. Opera (4)
A study of opera masterworks that often coincide with operas presented in the San Diego Opera season. Class consists of lectures, listening labs, live performances, and opera on video. **Prerequisite:** none.

13AF. World Music/Africa (4)
A course that focuses on the music of Africa and on African ways of music making in the Diaspora to the Caribbean and South America. No prior technical knowledge of music is necessary. **Prerequisite:** none.

13AM. World Music/Multicultural America (4)
A study of music cultures in the United States, particularly Native American, Hispanic American, European American, Asian American, and Pacific Islanders from the perspective of ethnicity, origin, interaction, and the contribution of various ethnic groups to American musical life. No prior technical knowledge of music is necessary. **Prerequisite:** none.

13AS. World Music/Asia and Oceania (4)
Introduction to selected performance traditions of Asia and Oceania with links to local and visiting musicians from these cultures. No prior technical knowledge of music is necessary. **Prerequisite:** none.

14. Contemporary Music (4)
This course offers opportunities to prepare oneself for experiences with new music (through preview lectures), hear performances (by visiting or faculty artists), to discuss each event informally with a faculty panel: an effort to foster informed listening to the new in music. **Prerequisite:** none.

15. Popular Music (4)
A course on popular music from different time periods, covered through lectures, films, and listening sessions. Topics vary from year to year. May be repeated once for credit. **Prerequisite:** none.

32. Instrumental/Vocal Instruction (2)
Individual instruction on intermediate level in instrumental technique and repertory. For declared music majors and minors. Students must be simultaneously enrolled in a performance ensemble or non-performance music course. May be taken six times for credit. **Prerequisites:** audition and department stamp.

32G. Group Instrumental Instruction (2)
Group instruction in instrumental or vocal technique and repertory. Intermediate level. Intended for students who make an important contribution to Department of Music ensembles. **Prerequisites:** Written recommendation of ensemble director and audition for performance faculty on first day of classes required. Department stamp required. May be taken for credit six times. (Offered in selected years.)

32V. Vocal Instruction (1)
Individual instruction on intermediate level in vocal technique and repertory. For declared music majors and minors. Students must be simultaneously enrolled in a performance ensemble or non-performance music course and in Music 32VM. May be taken six times for credit. **Prerequisites:** audition and department stamp.

32VM. Vocal Masterclass (1)
All students enrolled in voice lessons (32V, 132V, or 132C) perform for one another and their instructors. Students critique in-class performances, with emphasis on presentation, diction, dramatic effect, vocal quality, and musicality. **Prerequisite:** concurrent enrollment in Music 32V, 132V, or 132C.

33A. Introduction to Composition I (4)
First course in a sequence for music majors and non-majors pursuing an emphasis in composition. The course examines "sound" itself and various ways of building sounds into musical structures, and develops skills in music

notation. Students compose solo pieces in shorter forms. Students may not receive credit for both Music 33 and 33A. **Prerequisite:** Music 2C or consent of instructor.

33B. Introduction to Composition II (4)
Second part of course sequence for students pursuing a composition emphasis. Course continues the building of skills with the organization of basic compositional elements: pitch, rhythm, and timbre. It explores issues of musical texture, expression, and structure in traditional and contemporary repertoire. Writing for two instruments in more extended forms. **Prerequisite:** Music 33A.

33C. Introduction to Composition III (4)
Third part of course sequence for students pursuing a composition emphasis. Course continues the development of skills in instrumentation and analysis. It includes a survey of advanced techniques in contemporary composition, with additional focus on notation, part-preparation, and the art of writing for small groups of instruments. **Prerequisite:** Music 33B.

87. Freshman Seminar (1)
The Freshman Seminar Program is designed to provide new students with the opportunity to explore an intellectual topic with a faculty member in a small seminar setting. Freshman seminars are offered in all campus departments and undergraduate colleges, and topics vary from quarter to quarter. Enrollment is limited to 15 to 20 students, with preference given to entering freshmen.

95. Ensemble Performance (2)
Performance in an ensemble appropriate to student abilities and interests. Normally each section requires student participation for the whole academic year, with credit for participation each quarter. Sections of Music 95W have included: African drumming, Korean percussion, Indian sitar and tabla, koto, and Indonesian flute. Not all sections will be offered every year. May be repeated for credit. Grading on participation level, individual testing, comparative papers on repertoire covered, etc. **Prerequisites:** audition and consent of instructor for each section. Materials fee required.

Note: Students in the Music 95 series courses may enroll with a letter grade option a total of twelve units for registered music majors and a total of six units for all other students; after which students may continue to enroll in Music 95 courses, but only with a P/NP grade option. There is one exception to the above grading policy. Music 95G, Gospel Choir, can only be taken for a P/NP grading option.

Section B. Instrument Choir

Section C. Concert Choir

Section D. Symphonic Chorus

Section E. Chamber Orchestra

Section G. Gospel Choir

Section H. Chamber Opera (Not offered every year.)

Section JC. Jazz Chamber Ensembles

Section JL. Large Jazz Ensemble

Section K. Chamber Singers

Section L. Wind Ensemble

Section W. World Music Ensembles

ICAM 40. Introduction to Computing in the Arts (4)
(Cross-listed with VIS 40.) An introduction to conceptual uses and historical precedents for use of computers in art making. Introduces students to the program's computer facilities and teaches them basic computer skills. **Prerequisite:** Visual Arts and ICAM majors and minors only. Note: Materials fee required.

UPPER-DIVISION

101A. Music Theory and Practice I (4)
Study of modal counterpart in the style of the sixteenth century. Two-voice species counterpoint studies. Analysis of music of the period. Musicianship studies: sight-singing,

dictation, and keyboard skills. **Prerequisites:** Music 2C and 2CK.

101B. Music Theory and Practice II (4)
Study of tonal harmony and counterpoint. Analysis of Bach chorales and other music from the Baroque period. Musicianship studies: sight-singing, dictation, and keyboard skills. **Prerequisite:** Music 101A.

101C. Music Theory and Practice III (4)
Tonal harmony and counterpoint. Analysis of larger classical forms: Sonata, Variation, Minuet and Trio, Rondo. Musicianship studies: sight-singing, dictation, and keyboard skills. **Prerequisite:** Music 101B.

102A. Music Theory and Practice IV (4)
Advanced study of the materials and structures of music (Beethoven to Wagner) emphasizing the evolution of music through chromatic harmony and voice leading. Development of aural discrimination and in-depth analysis. **Prerequisite:** Music 101C.

102B. Music Theory and Practice V (4)
Advanced study of the materials and structures of music (Schoenberg, Stravinsky, Webern, etc.—1900–1940) emphasizing the evolution of music through extended harmony post tonality and neoclassicism. Development of aural discrimination and in-depth analysis. **Prerequisite:** Music 102A.

102C. Music Theory and Practice VI (4)
Advanced study of the materials and structures of music (1945–2006) emphasizing the evolution of music through the many compositional trends of the late twentieth century. Development of aural discrimination and in-depth analysis. **Prerequisite:** Music 102B.

103A. Seminar in Composition I (4)
First part in compsition course sequence. Individual projects will be reviewed in seminar. Techniques of instrumentation will be developed through examination of scores and creative application. Assignments will include short exercises and analysis, and final project for standard ensemble. **Prerequisite:** Music 33C.

103B. Seminar in Composition II (4)
Second part in compsition course sequence. Intensive work in free composition by drafting a composition for presentation at the end of Music 103C. Written analysis of contemporary repertoire is introduced. Instruction about calligraphic conventions including computer engraving programs. **Prerequisite:** Music 103A.

103C. Seminar in Composition III (4)
Third part in compsition course sequence. A mixture of individual lessons as well as group meetings, with discussion of topics germane to the development of composers, including musical aesthetics and contemporary orchestration techniques. Final performance of students' works will take place at the end of the quarter. **Prerequisite:** Music 103B.

103D-E-F. Honors Seminar in Composition (4-4-4)
Advanced individual projects for senior music majors pursuing honors in composition. Projects will be critically reviewed in seminar with fellow students and faculty composers. **Prerequisites:** Music 103A-B-C and admission into the Department of Music Honors Program in composition. Department stamp required.

104. Jazz Transcription and Analysis (4)
An introduction to the practice of transcribing and analyzing improvised music. Discussion of music technique, style, aesthetics, and the ideology of transcription. **Prerequisites:** Music 101A and 101B.

105. Jazz Composition (4)
This course will explore a range of compositional possibilities from song forms to modal and more extended forms. May be repeated once for credit. **Prerequisite:** Music 104 or consent of instructor.

107. Critical Studies Seminar (4)
This seminar explores the history of music in relation to critical issues, such as race, gender, sexuality, the environment, and politics. Readings include recent literature in cultural studies, musicology, and sociology. Topics vary. May be taken three times for credit. **Prerequisite:** Music 120C.

110. Introduction to Ethnomusicology Seminar (4)
This seminar introduces the central theories, methods, and approaches used to study the musics of contemporary cultures, in their local contexts. In addition to surveying key writings, students will document music from their local environment. **Prerequisite:** upper-division standing or consent of instructor.

111. Topics/World Music Traditions (4)
A study of particular regional musics in their repertory, cultural context, and interaction with other traditions. Topics vary. **Prerequisite:** none.

112. Topics in European Music Before 1750 (4)
This course will address topics in medieval, Renaissance, and Baroque music; topics will vary from year to year. May be repeated five times for credit. **Prerequisites:** knowledge of music notation or consent of instructor; Music 4, 8–10, or 120 recommended.

113. Topics in Classic, Romantic, and Modern Music (4)
This course will focus on Western music between 1750 and the early 20th century; topics will vary from year to year. May be repeated five times for credit. **Prerequisites:** knowledge of music notation or consent of instructor; Music 4, 8–10, or 120 recommended.

114. Music of the Twentieth Century (4)
An exploration of materials and methods used in the music of our time. There will be an extra discussion group for music majors. May be repeated once for credit. **Prerequisites:** none.

115. Women in Music (4)
A survey of the biographical, historical, sociological, and political issues affecting woman musicians, their creativity, their opportunities, and their perception by others. It compares and contrasts the work of women composers, performers, patrons, teachers, and writers on music from the Middle Ages through the present. **Prerequisite:** consent of instructor.

116. Popular Music Studies Seminar (4)
This course examines special topics in popular music from various sociopolitical, aesthetic, and performance perspectives. Readings include recent literature in cultural studies, musicology, and/or performance practice. Topics vary. May be taken three times for credit. **Prerequisites:** upper-division standing or consent of instructor.

120A. History of Music in Western Culture I (4)
First part of intensive historical, analytical, and cultural-aesthetic examination of music in Western culture from the ninth through the twenty-first centuries. Considers both sacred and secular repertories, from Gregorian chant through early opera, c. 800–1600. **Prerequisites:** Music 1C or 2C or passing grade on proficiency exam. Music majors should be enrolled concurrently in Music 101A. Department stamp required for non-majors.

120B. History of Music in Western Culture II (4)
Second part of intensive historical, analytical, and cultural-aesthetic examination of music in Western culture from the ninth through the twenty-first centuries. Considers both instrumental and vocal repertories, from the Baroque to the Romantic, c. 1600–1830. **Prerequisites:** Music 120A. Music majors should be enrolled concurrently in Music 101B. Department stamp required for non-majors.

120C. History of Music in Western Culture III (4)
Third part of intensive historical, analytical, and cultural-aesthetic examination of music in Western culture from the ninth through the twenty-first centuries. Considers both established traditions and new trends, from Romanticism through Modernism and Post-Modernism, c. 1890–present. **Prerequisites:** Music 120B. Music majors should be enrolled concurrently in Music 101C. Department stamp required for non-majors.

126. Blues: An Oral Tradition (4)
This course will examine the development of the Blues from its roots in work-songs and the minstrel show to its flowering in the Mississippi Delta to the development of Urban Blues and the close relationship of the Blues with Jazz, Rhythm and Blues, and Rock and Roll. (Cross-listed with Ethnic Studies 178.) **Prerequisite:** none.

127A. Jazz Roots and Early Development (1900–1943) (4)
This course will trace the early development of Jazz and the diverse traditions which helped create this uniquely American art form. We will witness the emergence of Louis Armstrong in New Orleans and examine the composer's role in Jazz with Jelly Roll Morton and Duke Ellington. (Cross-listed with Ethnic Studies 179A.) **Prerequisite:** none.

127B. Jazz Since 1946: Freedom and Form (4)
This course will examine the evolution of Jazz from 1943 to the present. The course will survey the contrasting and competing styles in Jazz from BEBOP to COOL to the avant garde and fusion. (Cross-listed with Ethnic Studies 179B.) **Prerequisite:** none.

128. Principles and Practice of Conducting (4)
The theory and practice of instrumental and/or choral conducting as they have to do with basic baton techniques, score reading, interpretation, orchestration, program building, and functional analysis. Members of the class will be expected to demonstrate their knowledge in the conducting of a small ensemble performing literature from the eighteenth, nineteenth, and twentieth centuries. **Prerequisites:** Music 2A-B-C and 101A-B-C. Department stamp required.

129. Orchestration (4)
This course will give practical experience in orchestration. Students will study works from various eras of instrumental music and will demonstrate their knowledge by orchestrating works in the styles of these various eras, learning the capabilities, timbre, and articulation of all the instruments in the orchestra. **Prerequisite:** Music 101B.

130. Chamber Music Performance (2–4/0)
Instruction in the preparation of small group performances of representative instrumental and vocal chamber music literature. May be taken for credit six times, after which students must enroll for zero units. **Prerequisite:** consent of instructor through audition.

131. Advanced Improvisation Performance (4/0)
Master class instruction in advanced improvisation performance for declared majors and minors only or consent of instructor. Audition required at first class meeting. May be repeated six times for credit. **Prerequisites:** consent of instructor through audition. Department stamp required.

132. Pro-Seminar in Music Performance (4)
Individual or master class instruction in advanced instrumental performance. For declared music majors and minors. Students must be simultaneously enrolled in a performance ensemble or non-performance music course. May be taken six times for credit. **Prerequisites:** audition and department stamp.

132C. Vocal Coaching (4)
Individual instruction in advanced vocal coaching. Emphasis placed on diction and musical issues. For declared music majors and minors. Students must be simultaneously enrolled in the Vocal Masterclass, Music 32VM. May be taken six times for credit. **Prerequisites:** at least one quarter of Music 132V and consent of instructor. Department stamp required.

132R. Recital Preparation (4)
Advanced instrumental/vocal preparation for senior music majors pursuing honors in performance. Repertoire for a solo recital will be developed under the direction of the appropriate instrumental/vocal faculty member. Special audition during Welcome Week preceding fall quarter. **Prerequisites:** by audition only; Music 132. Department stamp required.

132V. Pro-Seminar in Vocal Instruction (3)
Individual instruction in advanced vocal performance. For declared music majors and minors. Students must be simultaneously enrolled in a performance ensemble or non-performance music course and in the Vocal Masterclass, Music 32VM. May be taken six times for credit. **Prerequisites:** audition and department stamp.

133. Projects in New Music Performance (4)
Performance of new music of the twentieth century. Normally offered winter quarter only. Required a minimum of one time for all music majors. May be taken two times

for credit. **Prerequisite:** consent of instructor through audition.

134. Symphonic Orchestra (4)
Repertoire is drawn from the classic symphonic literature of the eigtheenth, nineteenth, and twentieth centuries with a strong emphasis on recently composed and new music. Distinguished soloists, as well as The La Jolla Symphony Chorus, frequently appear with the orchestra. The La Jolla Symphony Orchestra performs two full-length programs each quarter, each program being performed twice. May be repeated six times for credit. **Prerequisites:** audition and department stamp required.

137A. Jazz Theory and Improvisation (4)
Study of jazz theory and improvisation, focused on fundamental rhythmic, harmonic, melodic, and formal aspects of modern jazz style. Application of theoretical knowledge to instruments and concepts will be reinforced through listening, transcription work, and composition and improvisation exercises. First course of a year-long sequence. **Prerequisites:** MUS 2A-B-C, proficiency exam, or consent on instructor.

137B. Jazz Theory and Improvisation (4)
Study of jazz theory and improvisation, focused on fundamental rhythmic, harmonic, melodic, and formal aspects of modern jazz style. Application of theoretical knowledge to instruments and concepts will be reinforced through listening, transcription work, and composition and improvisation exercises. Second course of a year-long sequence; continuation of Music 137A. **Prerequisites:** MUS 2A-B-C and 137A, proficiency exam, or consent on instructor.

137C. Jazz Theory and Improvisation (4)
Study of jazz theory and improvisation, focused on fundamental rhythmic, harmonic, melodic, and formal aspects of modern jazz style. Application of theoretical knowledge to instruments and concepts will be reinforced through listening, transcription work, and composition and improvisation exercises. Third course of a year-long sequence; continuation of MUS 137B. **Prerequisites:** MUS 2A-B-C and 137B, proficiency exam, or consent on instructor.

137D. Seminar in Jazz Studies I (4)
Advanced individual projects for senior music majors pursuing honors in jazz and music of the African diaspora. Projects will be critically reviewed in seminar with fellow students and jazz faculty. First course of a year-long sequence. **Prerequisites:** MUS 137A-B-C and admission into the Music Department Honors Program in jazz. Department stamp required.

137E. Seminar in Jazz Studies II (4)
Advanced individual projects for senior music majors pursuing honors in jazz and music of the African diaspora. Projects will be critically reviewed in seminar with fellow students and jazz faculty. Second course of a year-long sequence; continuation of 137D. **Prerequisites:** MUS 137D and department stamp.

137F. Seminar in Jazz Studies III (4)
Advanced individual projects for senior music majors pursuing honors in jazz and music of the African diaspora. Projects will be critically reviewed in seminar with fellow students and jazz faculty. Third course of a year-long sequence; continuation of 137E. **Prerequisites:** MUS 137E and department stamp.

143. Department Seminar (1)
The department seminar serves both as a general department meeting and as a forum for the presentation of research and performances by visitors, faculty, and students. Required of all undergraduate music majors every quarter.

150. Jazz and the Music of the African Diaspora: Special Topics Seminar (4)
An in-depth writing and listening intensive investigation into a jazz or diaspora-related music history topic. Topics vary from year to year. May be repeated once for credit. **Prerequisite:** Music 126, 127A or 127B, or consent of instructor.

151. Race, Culture, and Social Change (4)
Aggrieved groups generate distinctive cultural expressions by turning negative ascription into positive affirmation and by transforming segregation into congregation. This course

examines the role of cultural expressions in struggles for social change by these communities inside and outside the U.S. (Cross-listed with Ethnic Studies 108.) **Prerequisite:** upper-division standing or consent of instructor.

152. Hip Hop: The Politics of Culture (4)
Examination of hip-hop's music, technology, lyrics, and its influence in graffiti, film, music video, fiction, advertising, gender, corporate investment, government and censorship with a critical focus on race, gender, popular culture, and the politics of creative expression. (Cross-listed with Ethnic Studies 128.) **Prerequisite:** upper-division standing or consent of instructor.

153. African Americans and the Mass Media (4)
Examination of media representations of African Americans from slavery to the present focusing on emergence and transmission of enduring stereotypes, their relationship to changing social, political, and economic frameworks, and African Americans' responses to and interpretations of these mediated images. (Cross-listed with Ethnic Studies 164.) **Prerequisite:** upper-division standing or consent of instructor.

154. Black Music/Black Texts: Communication and Cultural Expression (4)
Explores roles of music as a traditional form of communication among Africans, Afro-Americans, and West Indians: Special attention given to poetry of black music, including blues and other forms of vocal music expressive of contestatory political attitudes. (Cross-listed with Ethnic Studies 176 and Literature in English 187.) **Prerequisite:** upper-division standing or consent of instructor.

170. Musical Acoustics (4)
(Formerly Music 160A.) An introduction to the acoustics of music with particular emphasis on contemporary digital techniques for understanding and manipulating sound. **Prerequisite:** Music 1A, 2A, or 4. Cross-listed with ICAM 103.

171. Computer Music I (4)
(Formerly Music 160C.) A practical introduction to computer techniques for desktop audio, including audio editing, MIDI control, and real-time music algorithms using the MAX programming environment. **Prerequisites:** Music 170; music majors, ICAM-music and ICAM-visual arts majors and minors, or consent of instructor.

172. Computer Music II (4)
(Formerly Music 161.) Computer synthesis techniques including wavetable and additive synthesis, waveshaping, and sampling. Transformation of musical sounds using filters, modulation, and delay effects. Fourier analysis of sounds. **Prerequisites:** Music 171 (formerly Music 160C); music majors, ICAM-music and ICAM-visual arts majors and minors, or consent of instructor.

173. Audio Production: Mixing and Editing (4)
(Formerly Music 162.) Theoretical and practical aspects of recording, mixing, and editing sound for both musical and multimedia applications. Covers audio montage, equalization, effects processing, spatialization, mastering, and diffusion. **Prerequisites:** Music 170 (formerly Music 160A); music majors, ICAM-music and ICAM-visual arts majors and minors, or consent of instructor.

174A. Audio/MIDI Studio Techniques I (2)
First of three-part sequence, detailing digital studio resources and production techniques. Hardware and software techniques explored in project setting. Topics include microphones, digital recording and editing, analog and digital interfaces, workflow, analytical listening. **Prerequisites:** Music 170, music majors, ICAM-music and ICAM-visual arts majors and minors, or consent of instructor.

174B. Audio/MIDI Studio Techniques II (2)
Second of three-part sequence, detailing digital studio resources and production techniques. Hardware and software techniques explored in project setting. Topics include electronic and acoustic mixing, signal processing, MIDI, synchronization and basic sound-for-picture. **Prerequisites:** Music 170, Music 174A; music majors, ICAM-music and ICAM-visual arts majors and minors, or consent of instructor.

174C. Audio/MIDI Studio Techniques III (2)
Third of three-part sequence, detailing digital studio resources and production techniques. Hardware and software techniques explored in project setting. Topics include audio quality, compression, mastering, surround sound, large scale production management. **Prerequisites:** Music 170, Music 174B; music majors, ICAM-music and ICAM-visual arts majors and minors, or consent of instructor.

175. Musical Psychoacoustics (4)
(Formerly Music 160B.) Survey of psychoacoustical phenomena, theories of hearing, and their relation to musical perception and cognition. Techniques of psychoacoustical experimentation. **Prerequisite:** Music 170 (formerly Music 160A) recommended.

176. Music Technology Seminar (4)
(Formerly Music 163.) Selected topics in music technology and its application to composition and/or performance. Offerings vary according to faculty availability and interest. May be repeated for credit. **Prerequisites:** Music 172 (formerly Music 161) and consent of instructor.

192. Senior Seminar in Music (1)
The Senior Seminar Program is designed to allow senior undergraduates to meet with faculty members in a small group setting to explore an intellectual topic in music (at the upper-division level). Topics will vary from quarter to quarter. Senior seminars may be taken for credit up to four times, with a change in topic, and permission of the department. Enrollment is limited to twenty students, with preference given to seniors. **Prerequisites:** upper-division standing; department stamp and/or consent of instructor required.

195. Instructional Assistance (2)
Assisting in the instruction of an undergraduate music class under the direct and constant supervision of a faculty member. May be taken for credit three times. **Prerequisites:** consent of instructor and departmental approval.

198. Directed Group Study (1–4)
Concentrated inquiry into various problems not covered in the usual undergraduate courses. **Prerequisites:** consent of instructor and department chair approval. Pass/Not Pass grade only.

199. Independent Study (1–4)
Independent reading, research, or creative work under the direction of a faculty member, provided no course covering the material to be studied already exists, and the study area derives from previous course work. **Prerequisites:** consent of instructor and department chair approval. Department stamp required. Pass/Not Pass grade only. May be taken for credit two times.

ICAM 101. Digital Imaging: Image and Interactivity (4)
(Cross-listed with VIS 140.) Introduction to digital image involving images, texts, and interactive display operating both within computer mediated space (i.e., Web site) and in physical space (i.e., artist book). Interactive narrative and computer programming are explored. Materials fee required. **Prerequisites:** VIS 40 or ICAM 40. Open to studio, media, and ICAM majors; computing and ICAM minors only. Two production course limitation.

ICAM 102. Digital Media I: Time, Movement, Sound (4)
(Cross-listed with VIS 145A.) Exploration of time dependent media components. Creation and manipulation of digital sound as well as moving images and their integration in multimedia work. Use of computer programming to control time is emphasized. Introduces time and process based digital media artmaking. Contemporary and historical works across time and process based media will be studied and projects produced. Topics may include software art, software and hardware interfacing, interaction, and installation in an art context. CSE 5A or equivalent program experience recommended. Materials fee required. **Prerequisites:** VIS 40 or ICAM 40 and VIS 140 or ICAM 101. Open to media, and ICAM majors; ICAM minors only. Two production course limitation.

ICAM 103. Musical Acoustics (4)
(Cross-listed with MUS 170.) An introduction to the acoustics of music with particular emphasis on contemporary

digital techniques for understanding and manipulating sound. **Prerequisites:** MUS 1A, 2A, or 4.

ICAM 110. Computing in the Arts: Current Practice (4)
Designed around the presentations by visiting artists, critics, and scientists involved with contemporary issues related to computer arts. Lectures by the instructor and contextual readings provide background material for the visitor presentations. **Prerequisites:** none. Note: Materials fee required.

ICAM 120. Virtual Environments (4)
Students create virtual reality artworks. Projects may be done individually or in groups. Exploration of theoretical issues involved will underlie acquisition of techniques utilized in the construction of virtual realities. Materials fee required. **Prerequisites:** VIS 145A or ICAM 102; CSE 11 recommended. Open to ICAM majors and minors only. Two production course limitation.

ICAM 130. Seminar in Contemporary Computer Topics (4)
(Cross-listed with VIS 149.) Topics relevant to computer-based art- and music-making, such as computer methods for making art/music, design of interactive systems, spatialization of visual/musical elements, critical studies. Topics will vary. May be repeated twice. Materials fee required. **Prerequisites:** VIS 140 or ICAM 101; VIS 145A or ICAM 102 and MUS 170 or ICAM 103 recommended. Open to media, and ICAM majors; ICAM minors only. Two production course limitation.

ICAM 150. History of Art and Technology (4)
(Cross-listed with VIS 159.) Aims to provide historical context for computer arts by examining the interaction between the arts, media technologies, and sciences in different historical periods. Topics vary (e.g., Renaissance perspective, futurism and technology, and computer art of the 1950s and 1960s. **Prerequisite:** none. Note: Materials fee required.

ICAM 160A. Senior Projects in Computer Arts I (4)
Students pursue projects of their own design over two quarters with support from faculty in a seminar environment. Project proposals are developed, informed by project development guidelines from real world examples. Collaborations are possible. Portfolio required for admissions. **Prerequisites:** VIS 141B or VIS 145B or VIS 147B or MUS 172. Open to ICAM majors only. Department stamp required. Two production course limitation.

ICAM 160B. Senior Projects in Computer Arts II (4)
Continuation of ICAM 160A. Completion and presentation of independent projects along with documentation. **Prerequisite:** ICAM 160A. Open to ICAM majors only. Department stamp required. Two production course limitation.

192. Senior Seminar in Music (1)
The Senior Seminar Program is designed to allow senior undergraduates to meet with faculty members in a small group setting to explore an intellectual topic in music (at the upper-division level). Topics will vary from quarter-to-quarter. Senior seminars may be taken for credit up to four times, with a change in topics, and permission of the department. Enrollment is limited to twenty students, with preference given to seniors. **Prerequisites:** upper-division standing; department stamp and/or consent of instructor.

ICAM 199. Special Studies (2/4)
Independent reading, research or creative work under direction of faculty member. **Prerequisites:** department stamp and upper-division standing required.

GRADUATE

All courses numbered 200 and above are intended for students admitted to the graduate program in music.

200. Contemporary Chamber Opera Performance (4)
Students will collaborate with faculty and guest artists in the preparation and performance of a fully staged contemporary chamber opera. The opera will be presented

in multiple public performances. Prerequisites: graduate standing in music, MU75/MU76, or consent of instructor.

201A-B-C-D-E-F. Projects in New Music Performance (1–4, 1–4, 1–4, 1–4, 1–4, 1–4)
Performance of contemporary music. Different sections represent active performance ensembles. A core requirement for music graduate students as outlined in the curriculum.

202. Advanced Projects in Performance (1–4)
Advanced performance of new music with members of the performance faculty (SONOR). Students taking this course do not need to take Music 201 that quarter. Enrollment by consent of instructor/director of SONOR. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp.

203A. Advanced Projects in Composition (6)
Meetings and laboratory sessions devoted to the study of composition in small groups. Consent of instructor required.

203B. Advanced Projects in Composition (6)
Meetings and laboratory sessions devoted to the study of composition in small groups. Consent of instructor required.

203C. Advanced Projects in Composition (6)
Meetings and laboratory sessions devoted to the study of composition in small groups. Consent of instructor required.

203D. Advanced Projects in Composition (1–4)
Meetings on group basis with faculty composer in sessions devoted to the study of composition. **Prerequisites:** 203A-B-C and consent of instructor.

204. Focus on Composition (2)
The purpose of this seminar is to bring in the entire population of the graduate composition program (all students and faculty) for in-depth discussion of critical issues in music theory and composition. Each meeting will feature a formal presentation by either a student, faculty member, or visitor, followed by lively and challenging debate on relevant issues. **Prerequisite:** consent of instructor.

205. Focus on Integrative Studies (2)
Meets on a biweekly basis to facilitate presentations by advanced students and invited guests and to encourage in-depth discussion between students, faculty, and visitors about theoretical and artistic issues of interest. Participation is required of all enrolled IS students until advanced to candidacy. Others are welcome to participate. **Prerequisite:** graduate standing in music.

206. Experimental Studies Seminar (4)
Seminars growing out of current faculty interests. The approach tends to be speculative and includes individual projects or papers as well as assigned readings. In the past, such areas as new instrumental and vocal resources, mixed media, and compositional linguistics have been offered. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp.

207. Theoretical Studies Seminar (4)
Seminars on subject areas relating to the established dimensions of music and in which theoreticians have produced a substantial body of work. These include studies in analysis, timbre, rhythm, notation, and psychoacoustics. Offerings vary depending on faculty availability and interest. Analytical paper required. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp.

209. Advanced Music Theory and Practice (4)
Advanced integrated studies in music theory; composition and styles study through analysis and performance. This course is intended primarily for doctoral students and may be taken by M.A. students only with special approval of M.A. advisor and course instructor. A major research or analytical publishable paper required. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp.

210. Musical Analysis (4)
The analysis of complex music. The course will assume that the student has a background in traditional music analysis.

The goal of the course is to investigate and develop analytical procedures that yield significant information about specific works of music, old and new. Reading, projects, and analytical papers. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp.

211. Introduction to Ethnomusicology (2)
Introduces the field of ethnomusicology by highlighting important thinkers, concepts, and issues and by orienting students toward work of an anthropological, ethnographic, or comparative nature. Students who have taken and passed MUS 208A may not get credit for MUS 211. **Prerequisite:** graduate standing in music

212. Introduction to System Inquiry (2)
Introduces the network of concepts and approaches that comprise systems inquiry and explores the theoretical, philosophical, and methodological implications of systems thinking for musical research and practice. Students who have taken MUS 208B for credit may not take MUS 212 for credit. **Prerequisite:** graduate standing in music.

213. Introduction to Critical Studies (2)
Introduces important themes and thinkers from the fields of critical theory and cultural studies and explores how musical behaviors and phenomena relate to matters of ideology, nationality, ethnicity, social class, race, and gender. Students who have taken MUS 208C for credit may not take MUS 213 for credit. **Prerequisite:** graduate standing in music.

214. Introduction to Creative Practices (2)
Surveys the terrain of contemporary creative music and investigates the social, cultural, historical, and technological dimensions of its manifestations and practice. Students who have taken MUS 208D for credit may not take MUS 214 for credit. **Prerequisite:** graduate standing in music.

228. Conducting (4)
This course will give practical experience in conducting a variety of works from various eras of instrumental and/or vocal music. Students will study problems of instrumental or vocal techniques, formal and expressive analysis of the music, and manners of rehearsal. Required of all graduate students. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp. (Offered in selected years.)

229. Seminar in Orchestration (4)
A seminar to give practical experience in orchestration. Students will study works from various eras of instrumental music and will demonstrate their knowledge by orchestrating works in the styles of these various eras, learning the capabilities, timbre, and articulation of all the instruments in the orchestra. **Prerequisite:** graduate standing. (Offered in selected years.)

230. Chamber Music Performance (4)
Performance of representative chamber music literature, instrumental and/or vocal, through coached rehearsal and seminar studies. Course may be repeated for credit since the literature studied varies from quarter to quarter. **Prerequisite:** consent of instructor.

232. Pro-Seminar in Music Performance (1–4)
Individual or master class instruction in advanced instrumental/vocal performance. **Prerequisite:** consent of instructor through audition.

234. Symphonic Orchestra (4)
Repertoire is drawn from the classic symphonic literature of the eigtheenth, nineteenth, and twentieth centuries with a strong emphasis on recently composed and new music. Distinguished soloists, as well as The La Jolla Symphony Chorus, frequently appear with the orchestra. The La Jolla Symphony Orchestra performs two full-length programs each quarter, each program being performed twice. May be repeated six times for credit. **Prerequisites:** audition required.

245. Focus on Performance (2)
The purpose of this seminar is to bring together performance students, faculty, and guests for discussion, presentation of student and faculty projects, performances by guest artists, and master classes with different members

of the performance faculty. **Prerequisite:** consent of instructor. (S/U grade option only.)

250. Special Projects (1–12)
An umbrella course offered to music graduate students in lieu of normal seminar offerings. Topics will be generated by faculty and graduate students and submitted in December each year for review by faculty. Students may register for up to four units of a specialized research topic with given faculty. May be taken for up to twelve units a quarter. (S/U grade option only.)

251. Integrative Studies Seminar in Ethnomusicology (4)
Provides an in-depth look at the shifting definitions, methods, and scope of ethnomusicology and explores contemporary writings and issues that are shaping the field today. **Prerequisite:** graduate standing in music.

252. Integrative Studies Seminar in Systems Inquiry (4)
Traces the development of systems thinking and encourages work of a transdisciplinary nature, integrating models, strategies, methods, and tools from natural, human, social, and technological realms. **Prerequisite:** graduate standing in music.

253. Integrative Studies Seminar in Critical Studies (4)
Develops critical thinking and self-reflexive inquiry through in-depth study of a diverse range of critical and scholarly traditions as they relate to music. Students are encouraged to investigate their own sense of identity and voice, as embodied in their creative and/or scholarly work. **Prerequisite:** graduate standing in music.

254. Integrative Studies Seminar in Creative Practice (4)
Students will explore a variety of approaches to collaborative work and will be challenged to develop a personal aesthetic in experimental art and new media and design original work for presentation at faculty juries. **Prerequisite:** graduate standing in music.

267. Advanced Music Technology Seminar (4)
Advanced topics in music technology and its application to composition and/or performance. Offerings vary according to faculty availability and interest. May be repeated for credit. **Prerequisites:** Music 173 or equivalent and consent of instructor.

270A. Digital Audio Processing (4)
Digital techniques for analysis, synthesis, and processing of musical sounds. Sampling theory. Software synthesis techniques. Digital filter design. The short-time Fourier transform. Numerical accuracy considerations. **Prerequisite:** consent of instructor.

270B. Musical Cognitive Science (4)
Theoretical bases for analyzing musical sound. Approaches to perception and cognition, including psychoacoustics and information processing, both ecological and computational. Models of audition including Helmholtz's consonance/dissonance theory and Bregman's streaming model. Musical cognition theories of Lerdahl and Narmour. Neural network models of music perception and cognition. Models of rhythm. The problem of timbre and timbre perception. **Prerequisite:** consent of instructor.

270C. Compositional Algorithms (4)
Transformations in musical composition; series and intervalic structures; serial approaches to rhythm and dynamic. The stochastic music of Xenakis and Cage. Hiller's automatic composition. Improvisational models. Computer analysis of musical style. Neurally inspired and other quasiparallel algorithms. **Prerequisite:** consent of instructor.

270D. Advanced Projects in Computer Music (4)
Meetings on group basis with computer music faculty in support of individual student research projects. **Prerequisites:** consent of instructor and completion of Music 270A-B-C.

271A. Survey of Electronic Music Techniques I (4)
A hands-on encounter with several important works from the classic electronic repertory, showing a representative subset of the electronic techniques available to musicians.

Students who have taken MUS 271 for credit may not take MUS 271A for credit. **Prerequisite:** graduate standing in music.

271B. Survey of Electronic Music Techniques II (4)
A continuation of 271A, with emphasis on live interactive techniques (e.g., audio processing; analysis/resynthesis; score following). **Prerequisites:** Music 271A and graduate standing in music.

271C. Survey of Electronic Music Techniques III (4)
A continuation of 271A and B, with emphasis on compositional techniques (e.g., computer-aided composition; production; spatialization). **Prerequisites:** Music 271B and graduate standing in music.

272. Seminar in Live Computer Music (4)
Group projects to create new pieces of live electronic music involving research in electronic music and/or instrumental techniques. May be repeated for credit. **Prerequisites:** Music 271A-B-C or consent of instructor and graduate standing in music.

291. Problems and Methods of Music Research and Performance (2)
The course will give practical experience in historical research, including use of important source materials, evaluation of editions, and examination of performance practice problems. (S/U grade option only.)

296. Directed Group Research in Performance (4)
This group research seminar involves the investigation and exploration of new and experimental performance concerns. Areas could include: improvisation, graphic notation, performance electronics, and working with combined media (such as dance, poetry, and theater). **Prerequisite:** graduate standing. (S/U grade option only.)

298. Directed Research (1–4)
Individual research. (S/U grades permitted.) May be repeated for credit. Enrollment by consent of instructor only.

299. Advanced Research Projects and Independent Study (1–12)
Individual research projects relevant to the student's selected area of graduate interest conducted in continuing relationship with a faculty advisor in preparation of the master's thesis or doctoral dissertation. **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp. (S/U grades permitted.)

500. Apprentice Teaching (1–4)
Participation in the undergraduate teaching program is required of all graduate students at the equivalent of 25 percent time for three quarters (six units is required for all graduate students). **Prerequisites:** graduate standing in music; others by written consent of instructor and department stamp. (S/U grade option only.)

501. Apprentice Teaching—Nondepartmental (4)
Consideration and development of pedagogical methods appropriate to undergraduate teaching. **Prerequisites:** graduate standing and consent of instructor. (S/U grade option only.)