

MUSIC

Courses offered by the Department of Music are listed under the subject code MUSIC on the Stanford Bulletin's ExploreCourses web site.

Mission of the Department of Music

The Department of Music promotes the practice, understanding and enjoyment of music in the University, offering a broad array of educational opportunities with specialization in composition, performance, musicology, ethnomusicology, and music technology.

Learning Outcomes (Undergraduate)

Music majors work toward a foundation in theory, history, and intensive written analysis in order to acquire the skills needed for a comprehensive understanding of tonal music. The following learning outcomes are used in evaluating students and the department's undergraduate program. Students are expected to:

1. select and outline a topic in tonal music analysis; choose methodologies for the explication of the topic.
2. demonstrate understanding of the underlying principles of tonal music analysis through the use of scholarly references and analytical tools and methodologies.
3. utilize primary source materials in written and oral presentations.
4. utilize secondary source materials in written and oral presentations.
5. demonstrate proficiency in academic writing on the subject of tonal music.
6. develop the skills to present a musical analysis to an audience.

Learning Outcomes (Graduate)

The purpose of the master's program is to further develop knowledge and skills in Music, including concentration in the fields of Composition, Music History, Computer-Based Music Theory and Acoustics, or Music, Science, and Technology, and to prepare students for a professional career or doctoral studies. This is achieved through completion of courses, in the primary field as well as related areas, and experience with independent work and specialization.

Through completion of advanced course work and rigorous skills training, the doctoral program prepares students to make original contributions to the knowledge and practice of Music and to interpret and present the results of such work in appropriate venues and publications.

The Doctor of Philosophy (Ph.D.) is conferred upon candidates who have demonstrated substantial scholarship and the ability to conduct independent research and analysis in either Musicology or Computer-Based Music Theory and Acoustics, based at the Center for Computer Research in Music and Acoustics (CCRMA).

The Doctor of Musical Arts (D.M.A.) in Composition is conferred upon candidates who have demonstrated substantial abilities in creating new musical works as demonstrated by their completed works under the supervision of composition faculty.

Bachelor of Arts in Music

The undergraduate major in Music is built around a series of foundational courses in theory, musicianship, and music history, in addition to performance and the proficiency requirements outlined below. Majors must complete a minimum of 62 units within the department to earn a Bachelor of Arts degree. All required courses for the B.A. in any concentration must be taken for a letter grade. Electives may be taken credit/no credit, but any courses taken toward concentration requirements must carry a letter grade.

Suggested Preparation for the Major

Students should allow more than two years for completion of the major, in part because of sequence courses with prerequisite requirements. Early planning is especially important for students wishing to double-major, for those contemplating overseas study, and for those wishing to pursue a concentration within the Music major. Music majors should attempt to complete MUSIC 21 Elements of Music I, MUSIC 22 Elements of Music II, and MUSIC 23 Elements of Music III in the freshman year; the series should be completed no later than Autumn Quarter of the junior year. It is recommended that majors complete MUSIC 40 Music History to 1600, MUSIC 41 Music History 1600-1830, MUSIC 42 Music History Since 1830 in the sophomore year; the series should be completed by the end of the junior year.

Suggested Preparatory Course:		Units
MUSIC 19A	Introduction to Music Theory	3
MUSIC 19B	Intermediate Music Theory	3

Fields of Study or Degree Options

Concentrations

Areas of concentration (subplans) are offered in five areas: Performance, Conducting, Composition, History and Theory, and Music, Science, and Technology. Subplans are declared in Axess, and appear on the student's transcript and diploma. Guidelines and further information are available from the Department of Music office. In order to complete requirements in a timely manner, students are urged to select this option no later than the end of the junior year for single-area concentrators and the middle of the sophomore year for multiple-area concentrators. Students pursuing multiple concentrations must fulfill all the requirements of each.

Departmental Honors

Honors in Music are awarded by the faculty to majors who have produced an independent project of exceptional quality through the Concentration program. Students who wish to pursue Honors must declare their Concentration(s) by May 31 of the Junior year (see the undergraduate student services officer for concentration-specific requirements). To receive Honors students must also have earned an overall GPA of 3.60 or higher and a GPA of 3.70 or higher in courses required for the Music major. Honors are conferred solely through faculty adjudication. For students concentrating in multiple areas, a single jury will be convened.

Degree Requirements

Prospective majors are required to choose a faculty adviser and submit a course plan. (Course plans and adviser agreement forms are available from the undergraduate student services officer.) It is recommended that students schedule a consultation meeting with the undergraduate student services officer as early as possible to plan a program of study.

Required Courses

The following courses are required of all majors.

1. Theory

		Units
MUSIC 21	Elements of Music I	3
MUSIC 22	Elements of Music II	3
MUSIC 23	Elements of Music III	3
MUSIC 24A	Ear Training I	1
MUSIC 24B	Ear Training II	1
MUSIC 24C	Ear Training III	1

Additional Music Theory Requirements

- *Piano Proficiency:* Majors are required to pass a Piano Proficiency examination as part of the music theory core (MUSIC 21 Elements of Music I, MUSIC 22 Elements of Music II, MUSIC 23 Elements

of Music III). The examination is given in the first two weeks of MUSIC 21. Students who do not pass the Piano Proficiency examination are required to enroll in either MUSIC 12A Introductory Piano Class, MUSIC 12B Introductory Piano Class, or MUSIC 12C Introductory Piano Class concurrently with the music theory core until they are able to pass the examination. The examination consists of scales and arpeggios, performance of a simple tune to be set by the examiner, sight-reading, and the performance of prepared pieces. Download additional information regarding the proficiency examination (<https://music.stanford.edu/sites/default/files/pianoprofexaminfo.pdf>).

- *Elective:* In addition to the Theory requirements listed above, majors must successfully complete one unit of an ear training elective course from the list below:

		Units
MUSIC 65A	Voice Class I	1
MUSIC 126	Introduction to Thoroughbass	1-3
MUSIC 127	Instrumentation and Orchestration	3
Or any course, upon approval from Ear Training Advisor		

- *Exit Exam:* in conjunction with the Music Theory series, majors are required to pass an aural skills proficiency examination administered at the end of the junior year. This examination tests the ability to transcribe, represent, and reproduce music vocally and at the keyboard, and must be passed before June of the senior year.

2. History

		Units
MUSIC 40	Music History to 1600	4
MUSIC 41	Music History 1600-1830	4
MUSIC 42	Music History Since 1830	4

3. Analysis

		Units
MUSIC 122A	Counterpoint	4
MUSIC 122B	Analysis of Tonal Music	4
MUSIC 122C	Introduction to 20th-Century Composition	4

4. Writing in the Major (WIM)

Select three courses, including at least two at the 4-unit level, as follows:

One course numbered 140, 141, or 142

MUSIC 140: Studies in Music of the Middle Ages

Pre- or corequisites for WIM credit: MUSIC 21, MUSIC 40*

MUSIC 141: Studies in Music of the Renaissance

Pre- or corequisites for WIM credit: MUSIC 21, MUSIC 40*

MUSIC 142: Studies in Music of the Baroque

Pre- or corequisites for WIM credit: MUSIC 22, MUSIC 41*

One course numbered 143, 144, or 145

MUSIC 143: Studies in Music of the Classical Period

Pre- or corequisites for WIM credit: MUSIC 22, MUSIC 41*

MUSIC 144: Studies in Music of the Romantic Period

Pre- or corequisites for WIM credit: MUSIC 23, MUSIC 42*

MUSIC 145: Studies in Western Art Music Since 1900

Pre- or corequisites for WIM credit: MUSIC 23, MUSIC 42*

One course, numbered 146, 147, 148, or 251

MUSIC 146: Studies in Ethnomusicology

Pre- or corequisites for WIM credit: MUSIC 22*

MUSIC 147: Studies in Music, Media, and Popular Culture

Pre- or corequisites for WIM credit: MUSIC 22*

MUSIC 148: Studies in Performance Practice

Pre- or corequisites for WIM credit: MUSIC 22*

MUSIC 251: Psychophysics and Music Cognition

*Any additional pre- and co-requisites will be indicated in the annual course bulletin.

*For complete enrollment requirements, consult the course description in the "ExploreCourse (<http://explorecourses.stanford.edu>)" section of this bulletin.

5. Applied

- A minimum of five quarters totaling 15 units of private instruction in instrumental and/or vocal performance (MUSIC 172/272-177/277). Students who do not qualify for private instruction at the intermediate or advanced level, but who wish to pursue the major may take introductory voice (MUSIC 65A Voice Class I and MUSIC 73 Intermediate Voice Class), piano (MUSIC 12A Introductory Piano Class and MUSIC 72A Intermediate Piano Class), or guitar (MUSIC 74C Classical Guitar Class) to reach the minimum proficiency levels required to be accepted into a private studio and then complete their five quarters. Requirements for the minimum levels of proficiency in each instrument for private instruction are posted at: <http://music.stanford.edu/Academics/Auditions.html>.
- A minimum of five quarters totaling at least 5 units of work in one or more of the department's performance organizations or chamber groups. To fulfill the ensemble requirement, Music majors need at least three quarters of participation in the department's traditional large ensembles (MUSIC 159–167), with the exception of students whose primary instrument is harp, keyboard, or guitar, who need to participate at least one quarter in the ensembles above, but who may fulfill the rest of the requirement with chamber music (MUSIC 171 Chamber Music). MUSIC 156 "sic": Improvisation Collective may count for up to two of the ensemble-unit requirements for the Music major.

Note—The following courses do not satisfy this requirement:

		Units
MUSIC 128	Stanford Laptop Orchestra: Composition, Coding, and Performance	1-5
MUSIC 160B	Stanford New Ensemble	1
MUSIC 161C	Red Vest Band	1
MUSIC 161D	Stanford Brass Ensemble	1

Concentration Requirements

A. Concentration in Performance

In addition to degree requirements required of majors listed above, students in the Performance concentration must:

1. Complete at least 6 additional, graded course units in one area of performance. Acceptable courses are described under "Applied" in the section describing private instruction and ensemble course work above. Additional courses might include, but are not limited to:

		Units
MUSIC 126	Introduction to Thoroughbass	1-3
MUSIC 154	History of Electronic Music	1-5
MUSIC 182	Diction for Singers	1
MUSIC 269	Research in Performance Practices	1-5
MUSIC 183A	German Art Song Interpretation	1
MUSIC 183B	French Art Song Interpretation	1
MUSIC 184A	Editing and Performing Early Music	1-3
MUSIC 184B	Topics in Opera Stagecraft	1-3

- Register for an independent project (MUSIC 198 Concentrations Project, 4 units) in the senior year under faculty supervision, leading to a faculty adjudicated senior recital with a writing component.

In preparation for the senior recital, students should reference the Recitals-at-a-Glance planning document (<https://sites.stanford.edu/music-dept/venues-spaces/reserve/recitals>), provided by the Department for all dates and appropriate deadlines.

B. Concentration in Conducting

In addition to degree requirements required of majors listed above, students in the Conducting concentration must:

- Complete at least 6 additional, graded elective course units in conducting. Additional courses might include, but are not limited to:

MUSIC 127	Instrumentation and Orchestration	3
MUSIC 130A	Introduction to Conducting	3
MUSIC 130B	Elementary Orchestral Conducting	3
MUSIC 130C	Elementary Choral Conducting	3
MUSIC 230	Advanced Orchestral Conducting	2-4
MUSIC 231	Advanced Choral Conducting	2-4

- Register for an independent project (MUSIC 198 Concentrations Project, 4 units) in the senior year under faculty supervision, leading to a senior conducting project.

In preparation for the senior recital, students should refer to the Recitals-at-a-Glance planning document (<https://sites.stanford.edu/music-dept/venues-spaces/reserve/recitals>), provided by the Department for all dates and appropriate deadlines.

C. Concentration in Composition

In addition to degree requirements required of majors listed above, students in the Composition concentration must:

- Complete MUSIC 127 Instrumentation and Orchestration
- Composition concentrators must take at least 2 quarters of individual study in composition MUSIC 125 Individual Undergraduate Projects in Composition, and at least one quarter of MUSIC 123 Undergraduate Seminar in Composition. These may count as 3 of the 5 quarters of required applied music classes for the major (the remaining two quarters of applied music must be taken in an instrumental or vocal area, as defined in the requirements for the music major).
- Complete at least 3 additional, graded elective course units in composition. Additional courses might include, but are not limited to:

MUSIC 123	Undergraduate Seminar in Composition	3
MUSIC 125	Individual Undergraduate Projects in Composition	1-3
MUSIC 127	Instrumentation and Orchestration	3
MUSIC 150	Musical Acoustics	3
MUSIC 154	History of Electronic Music	1-5

Select one of the following Series:

Series A

MUSIC 220A	Fundamentals of Computer-Generated Sound	2-4
MUSIC 220B	Compositional Algorithms, Psychoacoustics, and Computational Music	2-4
MUSIC 220C	Research Seminar in Computer-Generated Music	2-4

Series B

Any of the series in computer-generated sound, music, and composition

- Register for an independent project (MUSIC 198 Concentrations Project, 4 units) in the senior year under faculty supervision, leading to a faculty-adjudicated composition project. In preparation for the senior recital, students should refer to the Recitals-at-a-Glance planning document (<https://sites.stanford.edu/music-dept/venues-spaces/reserve/recitals>), provided by the Department for all dates and appropriate deadlines.

D. Concentration in History and Theory

In addition to degree requirements required of majors listed above, students in the History and Theory concentration must:

- Complete at least 6 additional, graded course units in history and theory. Additional courses might include, but are not limited to:

Units

Select any course not taken in fulfillment of the major requirement:

MUSIC 221	Topics in the History of Theory	3-5
MUSIC 140	Studies in Music of the Middle Ages	
MUSIC 141	Studies in Music of the Renaissance	
MUSIC 142	Studies in Music of the Baroque	
MUSIC 143	Studies in Music of the Classical Period	
MUSIC 144	Studies in Music of the Romantic Period	
MUSIC 145	Studies in Western Art Music Since 1900	
MUSIC 146	Studies in Ethnomusicology	
MUSIC 147	Studies in Music, Media, and Popular Culture	
MUSIC 148	Studies in Performance Practice	

- Register for an independent project (MUSIC 198 Concentrations Project 4 units) in the senior year under faculty supervision, leading to a senior research paper.

E. Concentration in Music, Science, and Technology

Requires completion of 62 units of course work that differs from that of the major and is delineated below. This field of study is designed for those students interested in the musical ramifications of rapidly evolving computer technology and digital audio, and in the acoustic and psychoacoustic foundations of music. This program can serve as a complementary major to students in the sciences and engineering. Students in the program are required to include the following courses in their studies:

- Theory and Analysis

Units

MUSIC 21	Elements of Music I	3
MUSIC 24A	Ear Training I	1
MUSIC 22	Elements of Music II	3
MUSIC 24B	Ear Training II	1
MUSIC 23	Elements of Music III (includes passing the piano and ear-training proficiency examinations, as described for the major)	3
MUSIC 24C	Ear Training III	1
MUSIC 150	Musical Acoustics	3
MUSIC 122B	Analysis of Tonal Music	4
MUSIC 251	Psychophysics and Music Cognition	4
MUSIC 220A	Fundamentals of Computer-Generated Sound	4
MUSIC 220B	Compositional Algorithms, Psychoacoustics, and Computational Music	4
MUSIC 220C	Research Seminar in Computer-Generated Music	4
MUSIC 220D	Research in Computer-Generated Music	4
MUSIC 250A	Physical Interaction Design for Music	4

Units

Units

2. Majors are required to pass a Piano Proficiency examination as part of the music theory core as described above in the "Degree Requirements" section, item 6. Additional Requirements. Download additional information regarding the proficiency examination (<http://music.stanford.edu/private/downloads/PIANO%20PROFICIENCY%20EXAM.doc>).
3. In addition to the three ear training courses above, MST students are also required to take an elective course in ear training, and pass an aural skills proficiency examination at the end of the junior year. This examination tests the ability to accurately transcribe, represent, and reproduce music vocally and at the keyboard.
4. Applied
 - Individual studies in performance, MUSIC 172/272-177/277 (6 units) or MUSIC 192A Foundations of Sound-Recording Technology and MUSIC 192B Advanced Sound Recording Technology (6 units)
 - A minimum of five quarters totaling at least 5 units of work in one or more of the department's performance organizations or chamber groups, or 5 units of MUSIC 192C Session Recording. To fulfill the ensemble requirement, Music majors need at least three quarters of participation in the department's traditional large ensembles (MUSIC 159–167), with the exception of students whose primary instrument is harp, keyboard, or guitar, who need to participate at least one quarter in the ensembles above, but who may fulfill the rest of the requirement with chamber music (MUSIC 192C Session Recording). MUSIC 156 "sic": Improvisation Collective may count for up to two of the ensemble-unit requirements for the Music major.

5. History

Select two of the following:

MUSIC 40	Music History to 1600	4
MUSIC 41	Music History 1600-1830	4
MUSIC 42	Music History Since 1830	4

6. Research Project

The program requires a senior research project (4 units) completed under faculty guidance. May be completed in conjunction with enrollment in any of the following:

MUSIC 220D	Research in Computer-Generated Music	4
MUSIC 199	Independent Study	4
MUSIC 198	Concentrations Project	4

Overseas Study or Study Abroad

Courses in Music are often available at Stanford overseas programs, especially in Berlin, Paris, Florence, and Oxford. See the "Overseas Studies Program" section of this bulletin for this year's listings. Music majors and minors should talk to the Department of Music undergraduate administrator prior to going overseas.

Joint Major Program in Music and Computer Science

The joint major program (JMP), authorized by the Academic Senate for a pilot period of six years beginning in 2014-15, permits students to major in both Computer Science and one of ten Humanities majors. See the "Joint Major Program (<http://exploreddegrees.stanford.edu/undergraduatedegreesandprograms/#jointmajortext>)" section of this bulletin for a description of University requirements for the JMP. See also the Undergraduate Advising and Research JMP web site and its associated FAQs.

Students completing the JMP receive a B.A.S. (Bachelor of Arts and Science).

Because the JMP is new and experimental, changes to procedures may occur; students are advised to check the relevant section of the bulletin periodically.

Music Major Requirements in the Joint Major Program

Because the Joint Major Program is new and experimental, some changes to the following may occur. Questions concerning a concentration project in addition to the basic requirements for a Joint Major in Music and Computer Science should be directed to the Department of Music student services office in Braun Music Center, Room 101.

See the "Computer Science Joint Major Program (<http://exploreddegrees.stanford.edu/schoolofengineering/computerscience/#jointmajorprogramtext>)" section of this bulletin for details on Computer Science requirements.

Students majoring in the joint major program in Computer Science and Music must complete the following:

1. Music Theory

		Units
MUSIC 21	Elements of Music I	3
MUSIC 22	Elements of Music II	3
MUSIC 23	Elements of Music III	3
MUSIC 24A	Ear Training I	1
MUSIC 24B	Ear Training II	1
Ur MUSIC 24C	Ear Training III	1
Total Units		12

Additional Music Theory Requirements

- *Piano Proficiency:* Majors are required to pass a Piano Proficiency examination as part of the music theory core (MUSIC 21 Elements of Music I, MUSIC 22 Elements of Music II, MUSIC 23 Elements of Music III). The examination is given in the first two weeks of MUSIC 21. Students who do not pass the Piano Proficiency examination are required to enroll in either MUSIC 12A Introductory Piano Class, MUSIC 12B Introductory Piano Class, or MUSIC 12C Introductory Piano Class concurrently with the music theory core until they are able to pass the examination. The examination consists of scales and arpeggios, performance of a simple tune to be set by the examiner, sight-reading, and the performance of prepared pieces. For additional information about this requirement, see Piano Proficiency Examination (<https://music.stanford.edu/sites/default/files/pianoprofexaminfo.pdf>).
- *Elective:* In addition to the Theory requirements listed above, majors must successfully complete one unit of an ear training elective course from the list below:

		Units
MUSIC 65A	Voice Class I	1
MUSIC 126	Introduction to Thoroughbass	1
MUSIC 127	Instrumentation and Orchestration	3
Or any course upon approval of the Ear Training adviser		

- *Exit Exam:* in conjunction with the Music Theory series, majors are required to pass an aural skills proficiency examination administered at the end of the junior year. This examination tests the ability to accurately transcribe, represent, and reproduce music vocally and at the keyboard, and must be passed before June of the senior year.

2. Music History

	Units
Select 2 of 3 from the list below	8

MUSIC 40	Music History to 1600	4
MUSIC 41	Music History 1600-1830	4
MUSIC 42	Music History Since 1830	4

3. Analysis

MUSIC 122B	Analysis of Tonal Music	4
------------	-------------------------	---

4. Computing and Music

MUSIC 220A	Fundamentals of Computer-Generated Sound	4
MUSIC 256A	Music, Computing, Design I: Art of Design for Computer Music	4
Total Units		8

5. WIM

WIM at 4 units must be taken. Course below is recommended, but can be replaced with any Music WIM course depending on student's area of interest.

MUSIC 251	Psychophysics and Music Cognition	4
Total Units		4

6. Electives

Students must submit 12 unit elective course plan to the JMP faculty adviser for approval no later than the beginning of the junior year. MUSIC 220B and MUSIC 250A are recommended, but elective course plan can consist of any courses from list below, or other Music department course(s) with permission of adviser.

MUSIC 122A	Counterpoint	4
MUSIC 122C	Introduction to 20th-Century Composition	4
MUSIC 128	Stanford Laptop Orchestra: Composition, Coding, and Performance	4
MUSIC 150	Musical Acoustics	3
MUSIC 220B	Compositional Algorithms, Psychoacoustics, and Computational Music	4
MUSIC 220C	Research Seminar in Computer-Generated Music	4
MUSIC 250A	Physical Interaction Design for Music	4
MUSIC 256B	Music, Computing, Design II: Virtual and Augmented Reality for Music	4

7. Applied Music

Students may elect to take either of the following to fulfill the applied music requirement:

7.1 Lesson and Ensemble Study

- 6 units of individual studies in performance, MUSIC 172/272-177/277 and
- 5 quarters totaling 5 units of work in one or more of the department's ensembles or chamber music groups. To fulfill the ensemble requirement, Music majors need at least three quarters of participation in the department's traditional large ensembles (MUSIC 159-167) with the exception of students whose primary instrument is harp, keyboard, or guitar, who need to participate at least one quarter in the ensembles above, but who may fulfill the rest of the requirement with chamber music.

7.2 Sound Recording

- 1 quarter (3 units) of MUSIC 192A Foundations of Sound-Recording Technology
- 1 quarter (3 units) of MUSIC 192B Advanced Sound Recording Technology

- 5 units of MUSIC 192C Session Recording

8. Capstone Project

MUSIC 220D	Research in Computer-Generated Music (3 units taken in conjunction with CS Capstone)	3
------------	--	---

9. Optional Concentrations

Students who would also like to complete an additional capstone project in Performance, Conducting, Composition, Music History and Theory, or Music, Science, and Technology must consult the Department of Music student services office in Braun Music Center, Room 101 to submit a proposal for an optional concentration.

Declaring a Joint Major Program

To declare the joint major, students must first declare each major through Axess, and then submit the Declaration or Change of Undergraduate Major, Minor, Honors, or Degree Program. (<https://stanford.box.com/change-UG-program>) The Major-Minor and Multiple Major Course Approval Form (http://studentaffairs.stanford.edu/sites/default/files/registrar/files/MajMin_MultMaj.pdf) is required for graduation for students with a joint major.

Dropping a Joint Major Program

To drop the joint major, students must submit the Declaration or Change of Undergraduate Major, Minor, Honors, or Degree Program. (<https://stanford.box.com/change-UG-program>) . Students may also consult the Student Services Center (<http://studentservicescenter.stanford.edu>) with questions concerning dropping the joint major.

Transcript and Diploma

Students completing a joint major graduate with a B.A.S. degree. The two majors are identified on one diploma separated by a hyphen. There will be a notation indicating that the student has completed a "Joint Major". The two majors are identified on the transcript with a notation indicating that the student has completed a "Joint Major".

Minor in Music

The Music minor provides students with a core of essential Music courses in the disciplines that establish both a foundation for informed appreciation of music and a basis for more advanced study, should the student wish to pursue it.

Degree Requirements

Total of 36 units required course work as delineated below, and passage of the piano proficiency examination.

Required Courses: General Music

1. Theory

		Units
MUSIC 21	Elements of Music I	3
MUSIC 22	Elements of Music II	3
MUSIC 23	Elements of Music III	3
MUSIC 24A	Ear Training I	1
MUSIC 24B	Ear Training II	1
MUSIC 24C	Ear Training III	1

Additional Music Theory Requirements

- **Piano Proficiency:** minors are required to pass a Piano Proficiency examination as part of the music theory core (MUSIC 21 Elements of Music I, MUSIC 22 Elements of Music II, MUSIC 23 Elements of Music III). The examination is given in the first two weeks of MUSIC 21. Students who do not pass the Piano Proficiency examination are required to enroll in either MUSIC 12A Introductory Piano Class, MUSIC 12B Introductory Piano Class, or MUSIC 12C

Introductory Piano Class concurrently with the music theory core until they are able to pass the examination. The examination consists of scales and arpeggios, performance of a simple tune to be set by the examiner, sight-reading, and the performance of prepared pieces. Download additional information regarding the proficiency examination (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/music/pianoprofexaminfo.pdf>).

- **Exit Exam:** in conjunction with the Music Theory series, minors are required to pass an aural skills proficiency examination administered at the end of the junior year. This examination tests the ability to accurately transcribe, represent, and reproduce music vocally and at the keyboard, and must be passed before June of the senior year.

2. History

		Units
MUSIC 40	Music History to 1600	4
MUSIC 41	Music History 1600-1830	4
MUSIC 42	Music History Since 1830	4

3. Applied: Ensemble

Two quarters, 2 units total.

		Units
MUSIC 159	Early Music Singers	1
MUSIC 160	Stanford Symphony Orchestra	1
MUSIC 160C	Stanford Baroque Soloists	1
MUSIC 160S	Summer Orchestra	1
MUSIC 161A	Stanford Wind Symphony	1
MUSIC 161B	Jazz Orchestra	1
MUSIC 162	Symphonic Chorus	1
MUSIC 163	Memorial Church Choir	1
MUSIC 165	Chamber Chorale	1
MUSIC 167	University Singers	1
MUSIC 167S	Summer Chorus	1

4. Applied: Individual

Two quarters at 3 units per quarter, 6 units total.

		Units
MUSIC 159	Early Music Singers	1
MUSIC 160	Stanford Symphony Orchestra	1
MUSIC 160C	Stanford Baroque Soloists	1
MUSIC 160S	Summer Orchestra	1
MUSIC 161A	Stanford Wind Symphony	1
MUSIC 161B	Jazz Orchestra	1
MUSIC 162	Symphonic Chorus	1
MUSIC 163	Memorial Church Choir	1
MUSIC 165	Chamber Chorale	1
MUSIC 167	University Singers	1
MUSIC 167S	Summer Chorus	1

4. WIM, 4 units

4 units in any course numbered Music 140-149, except MUSIC 140G, or MUSIC 251. Offerings in 2014-2015 include:

MUSIC 140J	Studies in Music of the Middle Ages: Music and Memory	4
MUSIC 141J	Studies in Music of the Renaissance	2-4
MUSIC 143J	Studies in Music of the Classical Period: Franz Joseph Haydn	4
MUSIC 144J	Studies in Music of the Romantic Period: Faust in 19th-century Music	4

MUSIC 145J	Studies in Western Art Music Since 1900: The Music & Ideas of Charles Ives	4
MUSIC 146J	Studies in Ethnomusicology: Listening to the Local: Music Ethnography of the Bay Area	4
MUSIC 147J	Studies in Music, Media, and Popular Culture: The Soul Tradition in African American Music	4
MUSIC 147K	Studies in Music, Media, and Popular Culture: Music and Urban Film	4
MUSIC 147L	Studies in Music, Media, and Popular Culture: Latin American Music and Globalization	4
MUSIC 148J	Studies in Perf Practice: Reactions to the Record: Early Recordings, Lost Styles, and Music's Future	4
MUSIC 251	Psychophysics and Music Cognition	4

Required Courses: Music, Science and Technology

1. Theory

		Units
MUSIC 21	Elements of Music I	3
MUSIC 22	Elements of Music II	3
MUSIC 23	Elements of Music III	3
MUSIC 24A	Ear Training I	1
MUSIC 24B	Ear Training II	1
MUSIC 24C	Ear Training III	1
MUSIC 150	Musical Acoustics	3
MUSIC 220A	Fundamentals of Computer-Generated Sound	2-4
MUSIC 220B	Compositional Algorithms, Psychoacoustics, and Computational Music	2-4

2. Applied

		Units
MUSIC 192A	Foundations of Sound-Recording Technology	3
MUSIC 192B	Advanced Sound Recording Technology	3
MUSIC 192C	Session Recording (two quarters, 3 units total)	1-2

Alternatively, students pursuing the MST minor may elect to fulfill the applied music requirement with ensemble units and individual lessons as described in the Applied requirements for the General Music minor above.

3. WIM, 4 units

		Units
MUSIC 251	Psychophysics and Music Cognition	4

Performance Certificate Program for Non Music Majors

As a locus of great academic and artistic depth and diversity, the Department of Music's performance programs have long engaged students who, even though they are not music majors, are serious and dedicated to furthering their skills in music performance. The Certificate in Music Performance program provides a select cohort of these students the opportunity for further recognition of their artistic achievement.

Units This program is open by audition to undergraduate students who already demonstrate a high degree of accomplishment in their area of music performance, study privately with one of the Department of Music's faculty, and who wish to bolster their performance studies with coursework that may be drawn from the Department of Music's other areas of academic focus: history, theory, computer music, and composition. The Certificate in Music Performance is issued by the Department of Music and will not appear on any University record, including the student's transcript.

Admission

Students are admitted to the Certificate in Music Performance program based on an audition adjudicated by Department of Music faculty at the beginning of Spring Quarter. To request an audition, the student should speak with the private lesson instructor and the Department of Music's undergraduate student services officer. Email ugmusicinquiries@lists.stanford.edu (ugmusicinquiries@stanford.edu) for additional information. At the time of the audition, students must have already declared a major outside of music.

Requirements

Once admitted into the program, students must complete a course plan to be approved by department faculty based on the requirements below

1. Performance

- A minimum of six quarters of individual lessons of private instruction and/or vocal performance (MUSIC 172/272-177/277). Any quarters of instruction taken prior to admission into the program may also count towards these requirements. Requirements for the minimum levels of proficiency in each instrument for private instruction are posted on the Music Department's (<http://exploreddegrees.stanford.edu/schoolofhumanitiesandsciences/music/%20http://music.stanford.edu/Academics/Auditions.html.html>) web site (<https://sites.stanford.edu/music-dept/academics/undergraduates>). All six quarters of lesson study must be in the same instrument area.
- A minimum of six quarters of ensemble experience in the Department of Music's ensembles and chamber groups. For students whose primary instrument area is guitar, keyboard or harp, at least one quarter of ensemble experience must be in one of the department's traditional large ensembles (MUSIC 159-167, MUSIC 184). The remaining ensemble requirements may be filled with chamber music (MUSIC 171). Keyboard students may also take MUSIC 171 Chamber Music, MUSIC 171 Chamber Music, and MUSIC 171 Chamber Music to fulfill this requirement. All non-keyboard, guitar or harp students must successfully complete three quarters in the department's traditional large ensembles (MUSIC 159-167, MUSIC 184), and three quarters in conductor-less, small ensembles such as chamber music or jazz combos MUSIC 171 Chamber Music. MUSIC 156 "sic": Improvisation Collective may count for up to two of the ensemble unit requirements. Any quarters of ensemble taken prior to admission into the program may also count towards these requirements.

2. Music Theory

Students are required to complete one course in Music Theory (MUSIC 21 Elements of Music I, MUSIC 22 Elements of Music II, or MUSIC 23 Elements of Music III). For the purposes of the Performance Certificate, the student may elect to take these courses on a Credit/No Credit grading basis. However, students must also pass the associated Piano Proficiency Exam and take one course in Ear Training.

3. Elective Courses

6 or more total course units in Music, dependent upon course plan document submitted following acceptance into the program.

4. Final Project

To complete the Performance Certificate, students must enroll in a 4-unit MUSIC 199 Independent Study or 4-unit MUSIC 198 Concentrations Project and complete a final, performance-based capstone project. Students must pass faculty adjudication, and, in addition, complete a writing project (essay or program notes) pre-approved by the lesson instructor. Students should refer to the Department of Music website's Recitals-at-a-Glance (<https://sites.stanford.edu/music-dept/venues-spaces/reserve/recitals>) page for appropriate recital planning dates and deadlines.

Master of Arts in Music

University requirements for the M.A. are described in the "Graduate Degrees (<http://exploreddegrees.stanford.edu/graduatedegrees>)" section of this bulletin.

None of Stanford's required undergraduate courses may be credited toward an advanced degree unless specifically required for both degrees. Only work that receives a grade of 'A,' 'B,' or 'Satisfactory' (a passing grade in an instructor-mandated credit/no credit course) in Music courses numbered 100 or higher taken as a graduate student is recognized as fulfilling the advanced-degree requirements. Students may need to devote more than the minimum time in residence if preparation for graduate study is inadequate.

Admission

Applicants are required to submit evidence of accomplishment (scores, recordings, and/or research papers) when they complete the application form. Applicants should arrange to take the Graduate Record Examination (GRE) well in advance of the second Tuesday in December application deadline. All components of the application are due by the second Tuesday in December. International students whose first language is not English are also required to take the TOEFL exam (with certain exceptions: see the Office of Graduate Admissions (<http://studentaffairs.stanford.edu/gradadmissions>) web site).

Degree Options

All of the following fields of study are declarable as subplans in Axes via the "Declaration or Change to a Field of Student" form; they appear on the transcript and the diploma:

- Master of Arts degree (M.A.) in Music—Composition subplan.
- Master of Arts degree (M.A.) in Music—Music History subplan.
- Master of Arts degree (M.A.) in Music—Computer-Based Music Theory and Acoustics subplan.
- Master of Arts degree (M.A.) in Music—Music, Science, and Technology subplan
 - Note: The M.A./M.S.T. program is the only terminal master's degree; it is two years in duration. It is available to current Stanford undergraduates as a coterminal MA, current Stanford graduates, and external applicants.

Degree Requirements

A minimum of 45 academic units is required for the master's degree in Music. The Department of Music does not accept students for study only towards the M.A. degree except in the Music, Science, and Technology program, described below.

1. Composition

Students are not admitted into the M.A. as a terminal degree for composition: rather, students in the D.M.A. program in composition who enter directly from the bachelor's level may, upon completing 45 graduate-level units and advancing to candidacy by passing the qualifying examination, be recommended for the M.A. degree in composition.

2. Music History

Students are not admitted into the M.A. as a terminal degree for music history: rather, students in the Ph.D. program in musicology who enter directly from the bachelor's level may, upon completing 45 graduate-level units and advancing to candidacy by passing the qualifying examination, be recommended for the M.A. degree in music history.

3. Computer-Based Music Theory and Acoustics

Students are not admitted into the M.A. as a terminal degree for computer-based music theory and acoustics: rather, students in the Ph.D. program in computer-based music theory and acoustics

who enter directly from the bachelor's level may, upon completing 45 graduate-level units and advancing to candidacy by passing the qualifying examination, be recommended for the M.A. degree in computer-based music theory and acoustics.

4. Music, Science, and Technology (M.S.T.)

The M.A. in Music, Science, and Technology is the department's only terminal master's degree. This is a two-year program of 45 graduate-level units focusing on the integration of music perception, music-related signal processing and controllers, synthesis, performance, and composition. The program is designed for students who have an undergraduate music, engineering, or science degree.

University Coterminal Requirements

Coterminal master's degree candidates are expected to complete all master's degree requirements as described in this bulletin. University requirements for the coterminal master's degree are described in the "Coterminal Master's Program (<http://exploreddegrees.stanford.edu/cotermdegrees>)" section. University requirements for the master's degree are described in the "Graduate Degrees (<http://exploreddegrees.stanford.edu/graduatedegrees/#masterstext>)" section of this bulletin.

After accepting admission to this coterminal master's degree program, students may request transfer of courses from the undergraduate to the graduate career to satisfy requirements for the master's degree. Transfer of courses to the graduate career requires review and approval of both the undergraduate and graduate programs on a case by case basis.

In this master's program, courses taken during or after the first quarter of the sophomore year are eligible for consideration for transfer to the graduate career; the timing of the first graduate quarter is not a factor. No courses taken prior to the first quarter of the sophomore year may be used to meet master's degree requirements.

Course transfers are not possible after the bachelor's degree has been conferred.

The University requires that the graduate adviser be assigned in the student's first graduate quarter even though the undergraduate career may still be open. The University also requires that the Master's Degree Program Proposal be completed by the student and approved by the department by the end of the student's first graduate quarter.

Required course work is listed below. A complete program with an individually-tailored list of electives will be formed in consultation with the student's adviser.

Required Courses

MUSIC 201	CCRMA Colloquium
MUSIC 220A	Fundamentals of Computer-Generated Sound
MUSIC 251	Psychophysics and Music Cognition
MUSIC 255	Intermedia Workshop
MUSIC 256A	Music, Computing, Design I: Art of Design for Computer Music
MUSIC 320A	Introduction to Audio Signal Processing Part I: Spectrum Analysis
MUSIC 320B	Introduction to Audio Signal Processing Part II: Digital Filters

Electives

The remaining units of graduate level work are determined in consultation with the student's adviser and include CCRMA electives, and may include courses taken outside the department.

Doctor of Musical Arts (D.M.A.) and Doctor of Philosophy (Ph.D.) in Music

University requirements for the D.M.A and Ph.D. are described in the "Graduate Degrees" section of this bulletin. The following statements apply to all the graduate degrees described below, unless otherwise indicated.

Admission

Applicants are required to submit evidence of accomplishment (scores, recordings, and/or research papers, according to the proposed field of concentration) when they complete the application form. Applicants should arrange to take the Graduate Record Examination (GRE) well in advance of the application deadline of the second Tuesday in December. All components of the application are due by the second Tuesday in December. International students whose first language is not English are also required to take the TOEFL exam (with certain exceptions: see the Office of Graduate Admissions (<http://studentaffairs.stanford.edu/gradadmissions>) web site).

Department Examinations

All entering doctoral graduate students are required to take:

1. a diagnostic examination testing the student in theory (counterpoint, harmony, and analysis), a proficiency examination in sight-singing; and,
2. for musicologists and composers only, a proficiency examination in piano sight-reading; and
3. for musicologists only, the history of Western art music.

These exams are given the week before classes begin in September each year. Teaching Assistant assignments and the funding associated with this portion of a graduate student's financial aid package are determined based upon successful completion of these exams.

Graduate Credit

None of Stanford's required undergraduate courses may be credited toward an advanced degree unless specifically required for both degrees. Only work that receives a grade of 'A,' 'B,' or 'S' (a passing grade in an instructor-mandated credit/no credit course) in music courses numbered 100 or higher taken as a graduate student is recognized as fulfilling the advanced-degree requirements. Students may need to devote more than the minimum time in residence if preparation for graduate study is inadequate.

Units The following may be taken as electives for graduate credit:

1. any course in another department numbered 100 or over (with adviser's consent)
2. any course in the Music department numbered 100 or over except those required for the B.A. degree. A letter grade of 'A,' 'B,' or 'S' (a passing grade in an instructor-mandated credit/no credit course) is required.
3. Music department group instruction (enroll in MUSIC 199 Independent Study after speaking with instructor):

		Units
MUSIC 72A	Intermediate Piano Class	1
MUSIC 72C	Harpsichord Class	1
MUSIC 72D	Jazz Piano Class	1
MUSIC 73	Intermediate Voice Class	1
MUSIC 74C	Classical Guitar Class	1
MUSIC 74D	Harp Class	1
MUSIC 75B	Renaissance Wind Instruments Class	1
MUSIC 76	Brass Instruments Class	1

MUSIC 77 Percussion Class

1 I. Composition

Degree Options

All of the following fields of study are declarable as subplans in Axxess via the "Declaration or Change to a Field of Study for Graduate Students" form; they appear on the transcript and the diploma:

- **Doctor of Musical Arts degree (D.M.A.) in Composition**

The D.M.A. is offered to a limited number of students who demonstrate substantial training in the field and high promise of attainment as composers. Students may work in acoustic and/or electronic forms. Breadth is given through studies in other branches of music and in relevant fields outside music, as desirable. The final project for this degree is a large-scale composition.

- **Doctor of Philosophy degree (Ph.D.) in Musicology**

- **Doctor of Philosophy degree (Ph.D.) in Computer-Based Music Theory and Acoustics**

The Ph.D. is offered in areas of the research of Stanford's graduate faculty: Musicology, and Computer-Based Music Theory and Acoustics (CBMTA) at the Center for Computer Research in Music and Acoustics (CCRMA). The department seeks students who demonstrate substantial scholarship, high promise of attainment, and the ability to do independent investigation and present the results of such research in a dissertation.

Degree Requirements

Residence

The candidate must complete a minimum of 135 academic units (see Residency under the Graduate Degrees (<http://exploreddegrees.stanford.edu/graduatedegrees>) section of this bulletin). Doctoral candidates working on Ph.D. dissertations or Doctor of Musical Arts (D.M.A.) final projects that require consultation with faculty members continue enrollment in the University under Terminal Graduate Registration (TGR), after they have reached the required 135 academic units and have completed their Special Area Examinations.

Qualifying Examination

A written and oral examination given just prior to the fourth quarter of residence for D.M.A. students and Ph.D. students in the Computer-Based Music Theory and Acoustics programs; for Ph.D. students in Musicology, the exams are given just prior to the eighth quarter of residence. This exam tests knowledge of history, theory, repertory, and analysis. For D.M.A. students a *Special Area Examination* topic proposal is due at the time of the *Qualifying Examination*.

Admission to Candidacy

Upon successful completion of the Qualifying Examination and 45 units of graduate level work, faculty consider the student's overall progress and academic achievement and determines if the student has the potential to successfully complete the requirements of the degree program. If a student's progress and potential are deemed sufficient to continue in the degree program, the student is directed to complete the Application for Candidacy for Doctoral Degree (<http://studentaffairs.stanford.edu/sites/default/files/registrar/files/appcanddoct.pdf>). Failure to advance to candidacy will result in the dismissal of the student from the program.

Teaching

All students in the Ph.D. or D.M.A. degree programs, regardless of sources of financial support, are required to complete six quarters of supervised teaching (Teaching Assistantship) at half time. MUSIC 280 TA Training Course (offered in Spring Quarter and taken at the end of the first year) is a required course for Teaching Assistants. Additional quarters of teaching may be offered by the department.

The Doctor of Musical Arts (D.M.A.) degree in Composition is given breadth through collateral studies in other branches of music and in relevant studies outside music as seems desirable. In addition to degree requirements required of all doctoral graduate students and listed above, students must complete the following required courses:

Required Courses		Units
MUSIC 280	TA Training Course	1
MUSIC 305C	Analysis and Repertoire: Late-Romantic to Contemporary	4
MUSIC 323	Doctoral Seminar in Composition (4 quarters within the first two years of study)	3-4
MUSIC 324	Graduate Composition Forum *	1
MUSIC 325	Individual Graduate Projects in Composition †	1-5
One elective course from the Ph.D. CBMTA curricula chosen from the following:		
MUSIC 220A	Fundamentals of Computer-Generated Sound	
MUSIC 251	Psychophysics and Music Cognition	
MUSIC 255	Intermedia Workshop	
MUSIC 256A	Music, Computing, Design I: Art of Design for Computer Music	
MUSIC 320A	Introduction to Audio Signal Processing Part I: Spectrum Analysis	3-4
MUSIC 320B	Introduction to Audio Signal Processing Part II: Digital Filters	3-4

* The requirement is for all six quarters during years 1 & 2, and a minimum of three quarters during years 3 & 4.

† Two or more quarters per year are required until advancement to candidacy; by the end of the second year the student shall have enrolled with a minimum of two different faculty members; but the end of the third year the student shall have enrolled with a minimum of three different faculty.

1. Besides those requirements listed above, candidates are expected to produce a number of works demonstrating their ability to compose in a variety of forms and for the common media: vocal, instrumental, and electronic music. If possible, the works submitted are presented in public performance prepared by the composer. Annual progress is reviewed by the composition faculty with a major portfolio review conducted during the Fall Quarter of the third year.
2. *Foreign Language Requirement*—At the time of advancement to candidacy, all D.M.A. students are required to have demonstrated a reading knowledge of one language other than English and the ability to translate it into idiomatic English.
3. *Special-Area Examination*—A written examination in the candidate's field of concentration, one-hour presentation followed by questions in MUSIC 324 Graduate Composition Forum, sample course syllabus, and final project proposal are required to be completed during the Winter Quarter of the fourth year of study, no later than the ninth week of classes.
4. *Final Project Presentation*—Required during the last quarter of residence, no later than the ninth week of classes, the purpose of the presentation is to demonstrate the ability of the candidate to organize and present the topic of the final project for public review. It should be one hour in length, followed by questions, treating aspects of the final project. Details regarding the D.M.A. final project presentation may be found in the Department of Music Graduate Handbook.
5. *Final Project*—Candidate's work culminates in a required Final Project. The final project in composition must be a substantial composition, the scope of which shall be agreed upon by the members of the

committee. Typically, work on the final project encompasses several quarters. Usually, smaller works, for specific performances, are composed at the same time.

6. *Reading Committee*—The membership of the reading committee is the principal final project adviser and a minimum of two additional members. The notice of appointment of a D.M.A. Final Project Reading Committee should be submitted to the department at the same time as the approved final project proposal and the completion of the Special Area Exam. It is the responsibility of the student, with the advice of his or her adviser, to approach appropriate faculty members and obtain their consent to serve on the reading committee. Obtain the D.M.A. reading committee form from the department office; fill it out; obtain committee members' signatures; return to the department office.

II. Musicology

In addition to degree requirements required of all doctoral graduate students and listed above, students must complete the following required courses:

Required Courses		Units
MUSIC 200A	Proseminar in Musicology and Music Bibliography (required of all entering students)	3-4
MUSIC 200B	Proseminar in Ethnomusicology	3-5
MUSIC 280	TA Training Course	1
MUSIC 300A	Medieval Notation	3-4
MUSIC 300B	Renaissance Notation	4
MUSIC 305A	Analysis and Repertoire: Medieval and Renaissance	4
MUSIC 305B	Analysis and Repertoire: Baroque to Early Romantic	4
MUSIC 305C	Analysis and Repertoire: Late-Romantic to Contemporary	4
MUSIC 310	Research Seminar in Musicology*	3-5
MUSIC 312A	Aesthetics and Criticism of Music, Ancients and Moderns: Plato to Nietzsche	4
MUSIC 312B	Aesthetics and Criticism of Music, Contemporaries: Heidegger to Today	4
MUSIC 330	Musicology Dissertation Colloquium†	1
One elective course from the D.M.A. Composition of Ph.D. CBMTA curricula chosen from the following (or other, by instructor and advisor consent):		
MUSIC 220A	Fundamentals of Computer-Generated Sound	
MUSIC 251	Psychophysics and Music Cognition	
MUSIC 253	Symbolic Musical Information	
MUSIC 254	Music Query, Analysis, and Style Simulation	
MUSIC 323	Doctoral Seminar in Composition	
MUSIC 324	Graduate Composition Forum	

* The requirement is for eight seminars of 3-5 units each. Up to two graduate seminars in other departments may be counted toward this requirement, pending adviser's approval.

† The requirement is for enrollment each Spring Quarter beginning in year four and continuing to graduation.

1. *Foreign Language Requirement*—At the time of advancement to candidacy, all Ph.D. students in Musicology must have passed a Ph.D. Language examination in German and in a second language, chosen from French, Italian, or Latin (or, on a case-by-case basis, another language, if it has significant bearing on the candidate's field of study). If one of these languages is the student's native language, the student may be exempted from an examination.

2. *Special-Area Examination*—A written and oral examination testing the student's knowledge of music and research in the student's field of concentration is completed during the fourth year of study, no later than the last day of classes in Autumn Quarter of that year. This includes an oral defense of the dissertation proposal. The examining committee comprises prospective readers of the dissertation.
3. *University Oral Examination*—Taken once the dissertation is substantially under way; an oral presentation is a defense of dissertation research methods and results.
4. *Dissertation*—After the first two years of graduate study, the student concentrates on research and writing of the dissertation. The dissertation demonstrates the student's ability to work systematically and independently to produce an essay of competent scholarship.
5. *Reading Committee*—The minimum membership of the reading committee is 1) the principal dissertation adviser, 2) a second member from the department, and 3) a third member from the major department or another department. If a third member is from another institution, a fourth member must be appointed from the department. The principal dissertation adviser and all other members of the committee must belong to the Academic Council. The notice of appointment of a Reading Committee should be submitted to the department at the same time as the approved dissertation proposal and the completion of the Special-Area Exam. It is the responsibility of the student, with the advice of his or her adviser, to approach appropriate faculty members and obtain their consent to serve on the reading committee.

III. Computer-Based Music Theory and Acoustics

In addition to degree requirements required of all doctoral graduate students and listed above, students must complete the following required courses:

Required Courses		
MUSIC 220A	Fundamentals of Computer-Generated Sound	4
MUSIC 220B	Compositional Algorithms, Psychoacoustics, and Computational Music	4
MUSIC 220C	Research Seminar in Computer-Generated Music	2-4
MUSIC 220D	Research in Computer-Generated Music*	1-10
MUSIC 251	Psychophysics and Music Cognition	1-5
MUSIC 280	TA Training Course	1
MUSIC 305C	Analysis and Repertoire: Late-Romantic to Contemporary	4
MUSIC 320A	Introduction to Audio Signal Processing Part I: Spectrum Analysis	3-4
MUSIC 320B	Introduction to Audio Signal Processing Part II: Digital Filters	3-4

* The requirement is for 12 units.

1. *Foreign Language Requirement*—At the time of advancement to candidacy, all Ph.D. students in computer-based music theory and acoustics are required to have demonstrated a reading knowledge of one language other than English and the ability to translate it into idiomatic English.
2. *Special-Area Examination*—A written and oral examination testing the student's knowledge of music and research in the student's field of concentration is completed during the fourth year of study, no later than the last day of classes in Autumn Quarter of that year. This includes an oral defense of the dissertation proposal. The examining committee comprises prospective readers of the dissertation.
3. *University Oral Examination*—Taken once the dissertation is substantially under way; an oral presentation is a defense of dissertation research methods and results.
4. *Dissertation*—After the first two years of graduate study, the student concentrates on research and writing of the dissertation. The

dissertation demonstrates the student's ability to work systematically and independently to produce an essay of competent scholarship.

5. *Reading Committee*—The minimum membership of the reading committee is 1) the principal dissertation adviser, 2) a second member from the department, and 3) a third member from the major department or another department. If a third member is from another institution, a fourth member must be appointed from the department. The principal dissertation adviser and all other members of the committee must belong to the Academic Council. The notice of appointment of a Reading Committee should be submitted to the department at the same time as the approved dissertation proposal and the completion of the Special-Area Exam. It is the responsibility of the student, with the advice of his or her adviser, to approach appropriate faculty members and obtain their consent to serve on the reading committee.

Emeriti: (Professors) John M. Chowning, Albert Cohen, George Houle, William H. Ramsey; *(Professors, Performance)* Arthur P. Barnes, Marie Gibson

Chair: Stephen M. Sano

Professors: Jonathan Berger (on leave Winter & Spring), Karol Berger (on leave), Chris Chafe, Brian Ferneyhough, Thomas Grey (on leave Autumn), Stephen Hinton, Julius O. Smith

Associate Professors: Mark Applebaum, Heather Hadlock, Jaroslaw Kapuscinski, William P. Mahrt, Jesse Rodin

Assistant Professors: Takako Fujioka, Charles Kronengold, Anna Schultz, Ge Wang

Professors (Teaching): George Barth (Piano), Stephen M. Sano (Director of Choral Studies)

Courtesy Professor: Paul DeMarinis

Senior Lecturers: Giancarlo Aquilanti (Director of Theory; Wind Ensemble), Talya Berger (Theory; on leave Autumn), Stephen Harrison (Cello), Thomas Schultz (Piano), Gregory A. Wait (Voice; Director of Vocal Studies), Frederick R. Weldy (Piano)

Lecturers: Akwasi Papa Abrefah (Steelman), Kumaran Arul (Piano), Erika Arulanantham (Theory), Fredrick Berry (Jazz Ensemble), Mark Brandenburg (Clarinet), Marie-Louise Catsalis (Voice), Marjorie Chauvel (Harp), Tony Clements (Tuba), Laura Dahl (Resident Collaborative Pianist), Anthony Doheny (Violin), John Dornenburg (Viola da Gamba), Greer Ellison (Flute, Baroque Flute), Charles A. Ferguson (Guitar), Debra Fong (Violin), Claire Giovannetti (Voice), Dawn Harms (Violin, Viola), Alexandra Hawley (Flute), David Henderson (Classical Saxophone), Wendy Hillhouse (Voice), Melody Holmes-Vedder (Flute), Nova Jiménez (Voice), McDowell Kenley (Trombone), Jay LeBeouf (CCRMA), Joo-Mee Lee (Violin), Mary Linduska (Voice, Summer), Murray Low (Jazz Piano), Adam Luftman (Trumpet), Anthony Martin (Baroque Violin), Robin May (Oboe), Seward McCain (Jazz Bass), Charles McCarthy (Jazz Saxophone), Robert Huw Morgan (University Organist, Organ), Bruce Moyer (Contrabass), Herbert Myers (Early Winds), James Nadel (Jazz), Rufus Olivier (Bassoon), Lawrence Ragent (French Horn), David Rokeach (Drum Set), Kelly Savage (Theory), Robin Sharp (Violin), Livia Sohn (Violin), Elaine Thornburgh (Harpichord), Erik Ulman (Composition, Theory), Linda Uyechi (Taiko), Rick Vandivier (Jazz Guitar), Mark Veregge (Percussion), John Worley (Jazz Trumpet), Hui (Daisy) You (Gu-Zheng), Timothy Zerlang (University Carillonneur, Piano)

Consulting Professors: Jonathan Abel (CCRMA), David Berners (CCRMA), Marina Bosi (CCRMA), Poppy Crum (CCRMA), Pierre Divenyi (CCRMA), Walter Hewlett (Computer-Assisted Research in the Humanities), Thomas Rossing (CCRMA), Eleanor Selfridge-Field (Computer-Assisted Research in the Humanities), Malcolm Slaney (CCRMA)

Assistant Consulting Professors: Gautham Mysore (CCRMA), Craig Sapp (Computer-Assisted Research in the Humanities), Jeffrey C. Smith (CCRMA)

Artists-in-Residence (St. Lawrence String Quartet): Geoff Nuttall (Violin), Owen Dalby (Violin), Lesley Robertson (Viola), Christopher Costanza (Cello)