

Master of Music, Performance	
Course Number and Title	Credits
Graduation Requirements 32 credits minimum, stipulated below, are required for graduation. The actual number of credit hours may vary, depending on the needs of individual students as determined by the results of predictive examinations.	
Core Courses	
MUS 503 Introduction to Music Research	3
MUS 510 Advanced Form and Analysis	3
MUS 557 Major Instrument Literature	3
Music History Elective	3
Performance Courses 17-18	
MUS 563, 564 Major Instrument Pedagogy I, II, or additional Music History and/or Music Theory (6 cr)	
*MUS 465G, 466G Diction for Singers I, II (4 cr) or Additional Graduate level music elective (3 cr)	
MUS-PRV 5_4 Private lessons on major instrument (8 cr) (2 semesters minimum: private lessons must be taken each semester of residency)	
Performance Culminating Project 3	
MUS-APL 546 Graduate Solo Performance Recital	
Performance Comprehensive Review After successful completion of the culminating project, the student's committee will administer a written examination consisting of three questions, one from each committee member. The questions will cover areas of the student's recital or culminating project and course work taken toward the degree. After satisfactory completion of the written examination, the committee will meet with the student for an oral examination.	
Total	32-33
*Required of all vocal performance majors.	

Course Offerings

See *Course Numbering and Terminology* for definitions.

MUS-APL — Music Applied, Performance Classes, Recitals

MUS-APL 529 JAZZ IMPROVISATION (1-0-1)(F/S). Private lessons in jazz improvisation. Intended primarily for instrumental majors, this performance-oriented course deals with the principles of jazz harmony and scalar theory. These principles will be applied to selected exercises and standard jazz literature. Students should possess above-average technical facility on their instrument and should have a working knowledge of music theory. Extra fee, non-waivable, per private lesson fee schedule, required. PREREQ: Graduate Standing and MUS 103 or PERM/INST.

MUS-APL 546 GRADUATE SOLO PERFORMANCE RECITAL (0-V-3)(F/S). A full recital to be presented as the culminating project for the Master of Music degree, Performance. (Pass/Fail.) PREREQ: PERM/INST.

MUS-PRV — Music Private Lessons Performance Studies

Students will be assigned on the basis of an audition. Performance, Technical Study, Musical Interpretation, Literature, and Teaching Technique will be stressed.

All 500-level MUS-PRV courses are repeatable. See undergraduate Private Lesson Performance Studies course numbering system for explanation of course numbers.

MUS-PRV 501 (0-.5-1), 502 (0-.5-2), 504 (0-1-4). Woodwind instruments private lessons.

MUS-PRV 511 (0-.5-1), 512 (0-.5-2), 514 (0-1-4). Brass instruments private lessons.

MUS-PRV 521 (0-.5-1), 522 (0-.5-2), 524 (0-1-4). Percussion instruments private lessons.

MUS-PRV 531 (0-.5-1), 532 (0-.5-2), 534 (0-1-4). Voice private lessons.

MUS-PRV 541 (0-.5-1), 542 (0-.5-2), 544 (0-1-4). Keyboard instruments private lessons.

MUS-PRV 551 (0-.5-1), 552 (0-.5-2), 554 (0-1-4). Fretted string instruments private lessons.

MUS-PRV 561 (0-.5-1), 562 (0-.5-2), 564 (0-1-4). Bowed string instruments private lessons.

MUS-ENS—Music Ensemble

All MUS-ENS courses may be repeated for credit.

MUS-ENS 321G MARCHING BAND (0-V-1)(F). Designed to promote participation in and repertoire knowledge of literature for marching bands. The marching band performs at all home and at least one away football game and occasionally at other university or civic events. Open to all students with the approval of the director. Graduate music students will be expected to assume leadership roles or will be assigned extra duties within the band and/or its organization.

MUS-ENS 323G PEP BAND (0-V-1)(S). Designed to promote participation in and repertoire knowledge for athletic and promotional bands. Regular public performances are required at Boise State athletic events and university and community functions. PREREQ: MUS-ENS 121/321-321G with an audition and/or PERM/INST.

MUS-ENS 501 UNIVERSITY SINGERS (0-2-1)(F,S). Open to all, a campus and community choir that focuses on improving vocal technique and musicianship skills. No audition. Major choral works from all periods, public performances.

MUS-ENS 503 CHAMBER SINGERS (0-2-1)(F,S). Ten select singers specializing in vocal chamber music, emphasizing Medieval, Renaissance, and Baroque music. Active performance schedule both on campus and in the community. Membership by audition. PREREQ: Audition and/or PERM/INST.

MUS-ENS 505 MEISTERSINGERS (0-2-1)(F,S). Advanced 42-voice concert-touring chorus, highest standards, very active performing schedule. Membership by audition. PREREQ: Audition and/or PERM/INST.

MUS-ENS 511 VOCAL JAZZ CHOIR (0-2-1)(F,S). Designed to promote participation in and repertoire knowledge of literature for vocal jazz choirs. Public performances. PREREQ: Audition and/or PERM/INST.

MUS-ENS 512 WOMEN'S CHORALE (0-2-1)(F,S). Specializing in choral literature for treble voices from all time periods, teaching vocal technique, musicianship, and sight-reading. Public performances. Membership by minimal audition. Public performances are given each semester. PREREQ: Audition and/or PERM/INST.

MUS-ENS 515 OPERA THEATER (0-5-1). Advanced study/experience in singing-acting technique and movement through performing in productions from the opera and/or musical theater repertoire. May be repeated for up to 4 credits maximum. PREREQ: PERM/INST.

MUS-ENS 518 EARLY MUSIC ENSEMBLE (0-3-1)(F,S). Course explores European vocal and instrumental music from the Middle Ages, Renaissance and Baroque periods through performance. Graduate music students will be expected to assume leadership roles or will be assigned extra duties within the ensemble. Concert performances by students enrolled in the course are expected each semester. May be repeated for credit.

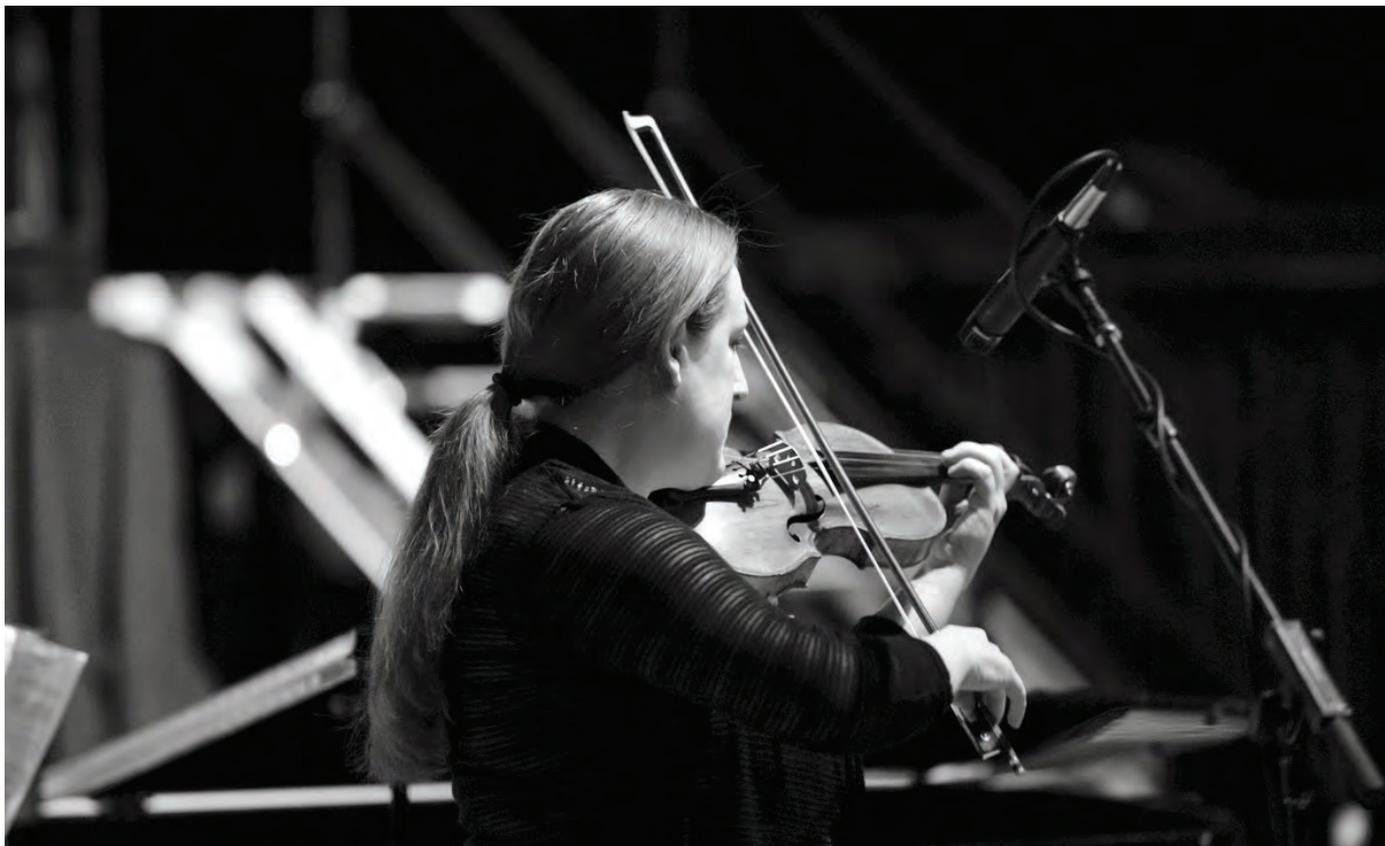
MUS-ENS 520 SYMPHONIC WINDS (0-5-1)(F,S). Rehearsal attendance and performance with the select concert band of the University. PREREQ: Audition and/or PERM/INST.

MUS-ENS 522 TREASURE VALLEY CONCERT BAND (0-3-1)(F,S). Rehearsal attendance and multiple performances with this full symphonic band comprising professionals and advanced adult musicians. PREREQ: PERM/INST.

MUS-ENS 526 JAZZ ENSEMBLE (0-3-1)(F,S). Rehearsal attendance and performance with the university big band jazz ensemble. PREREQ: Audition and/or PERM/INST.

MUS-ENS 540 PERCUSSION ENSEMBLE (0-2-1)(F,S). Rehearsal attendance and performance with the University percussion ensemble. PREREQ: PERM/INST.

MUS-ENS 550 ORCHESTRA (0-5-1)(F,S). Rehearsal attendance and performance with the university orchestra. Graduate students are expected to assume leadership roles or will be assigned extra duties within the orchestra and/or its organization. Audition required for new students. PREREQ: PERM/INST.



MUS-ENS 560 CHAMBER ENSEMBLE (0-V-1)(F,S). Participation in a faculty coached, official departmental chamber ensemble, resulting in a minimum of one public performance per semester. PREREQ: PERM/INST.

MUS-ENS 570 TROMBONE CHOIR (0-2-1)(F,S). Study and performance of the literature, including original and transcribed works for multiple tenor and bass trombones. Public performances each semester. PREREQ: PERM/INST.

MUS-ENS 585 DUO PIANO ENSEMBLE (0-2-1)(F,S). Survey of duo-piano literature, rehearsal and performance problems, resulting in public performance each semester. PREREQ: PERM/INST.

MUS — Music, General

MUS 423G SIXTEENTH-CENTURY COUNTERPOINT (3-0-3)(S). Study of 16th century compositional techniques. Compositions will be written in 2 to 4 voices, 5 species, C clefs and Latin texts. Analysis of/listening to music of the period. Additional compositions and/or research for graduate credit. PREREQ: MUS 220 or equivalent.

MUS 424G COUNTERPOINT SINCE 1600 (3-0-3)(F). Study and writing in contrapuntal styles from Baroque period to present day. Invertible counterpoint, canon, fugue, invention, and analysis of procedures in representative works. Additional compositions and/or research for graduate credit. PREREQ: MUS 220.

MUS 465G DICTION FOR SINGERS I (2-0-2)(F)(Odd years). A course designed for singers, devoted to the understanding of the International Phonetic Alphabet (IPA) system and the learning of the rules of pronunciation in Italian, Latin, and Spanish languages. Graduate students will additionally transcribe an entire song cycle or the songs of a proposed graduation recital. Required for all vocal performance majors and Master of Music vocal performance majors and strongly recommended for all voice emphasis majors. PREREQ: One year of MUS-PRV voice performance studies.

MUS 466G DICTION FOR SINGERS II (2-0-2)(S)(Even years). A continuation of MUS 465G Diction for Singers I, with emphasis on German, French, and English languages. Graduate students will additionally transcribe an entire song cycle or the songs of a proposed graduation recital. Required for all vocal performance majors and Master of Music vocal performance majors and strongly recommended for all voice emphasis majors. PREREQ: MUS 465G or PERM/INST.

MUS 501 HISTORY OF MUSIC IN THE UNITED STATES (3-0-3)(F/S).

Designed for either the non-specialist or specialist in music, this course will survey the role which music has played in the development of American culture. Vernacular and art music, as well as social and historical interrelationships with music will be examined and discussed. History elective.

MUS 502 SURVEY OF JAZZ (3-0-3)(S). Explores interpretation of America's original musical art form through listening and through discussion of socio-cultural contexts of jazz. Survey covers stylistic influences of nineteenth-century Africa and western Europe through current living exponents of jazz. In-depth book reviews and research papers on the subject are required. History elective. PREREQ: MUS 100 or MUS 101.

MUS 503 INTRODUCTION TO MUSIC RESEARCH (3-0-3)(F/S). This course will provide an introduction to the basic research literature pertinent to the student's major area of emphasis; an interpretation of research findings; and the means to develop skills and techniques needed for the writing of an extended research paper, thesis and/or dissertation, articles for publication and book/performance reviews.

MUS 504 SURVEY OF ETHNOMUSICOLOGY AND WORLD MUSIC (3-0-3)(S)(Even years). This course considers the role of music in society and culture, and examines several musical traditions beyond the scope of Western art music. History elective. PREREQ: Admission to Master of Music program or PERM/INST.

MUS 510 ADVANCED FORM AND ANALYSIS (3-0-3)(S). Analysis of harmonic and formal structures of the larger binary and ternary forms; the sonata, the symphony, the concerto, Baroque forms. Theory elective.

MUS 512 ELECTRONIC MUSIC APPLICATIONS (3-0-3)(F/S). A historical overview of electronic music and music technology. Hands-on experience with digital and analog synthesizers, effects processors, sampling, tape decks, computers and related software, and MIDI. Emphasis will be placed on the application of fundamental techniques of electronic music to creative composition. Theory elective.

MUS 557 MAJOR INSTRUMENT LITERATURE (3-0-3)(F/S). Advanced survey of the major instrument literature. The student will prepare a research paper on several typical or important works in the repertoire. Repeatable for credit for different instruments.

MUS 561 ADVANCED INSTRUMENTAL CONDUCTING (2-0-2)(F/S).

Designed for secondary instrumental music teachers and advanced performers, this course provides opportunity to discover, analyze, and solve technical conducting problems in both wind band and orchestral music. May be repeated for credit.

MUS 563 MAJOR INSTRUMENT PEDAGOGY I (3-0-3)(F). An advanced and in-depth investigation of pedagogical techniques, materials and principles used in the private teaching studio. Readings in the philosophy of teaching will be included. Repeatable for credit for different instruments.

MUS 564 MAJOR INSTRUMENT PEDAGOGY II (3-0-3)(S). Development of lesson plans and supervised studio teaching in both private and group settings. Recommended preparation: MUS 563. Repeatable for credit for different instruments.

MUS 567 CHORAL LITERATURE (2-0-2)(F). Survey course exploring choral works from all time periods. Though secular works will be discussed, special emphasis will be placed on tracing the development of the Mass, Motet, and Requiem throughout history. Strategies for teaching and performing these works will be discussed. Special projects include programming for elementary, secondary, and collegiate choirs.

MUS 570 NEW DEVELOPMENTS IN MUSIC EDUCATION (3-0-3)(F/S).

Designed to acquaint the music specialist with recent ideas in music education, including major trends in curriculum, new methodology, music in integrated courses, and reports of major conferences and symposia.

MUS 571 ADVANCED PRACTICES AND PRINCIPLES IN TEACHING MUSIC IN THE ELEMENTARY SCHOOL (3-0-3)(F/S). Designed for the general classroom teacher or music specialist, the course deals with old and new approaches to teaching music in the classroom, teaching materials, current research on problem singers, creative musical activities, and the development of music reading skills. PREREQ: MUS 374 or PERM/INST.

MUS 572 ADVANCED METHODS AND TECHNIQUES FOR THE ELEMENTARY MUSIC INSTRUCTOR (3-0-3)(F). A study of causes and solutions for problems occurring in the elementary music classroom, including methods, materials and teaching techniques. PREREQ: PERM/INST.

MUS 573 ADVANCED METHODS AND TECHNIQUES FOR THE INSTRUMENTAL INSTRUCTOR (3-0-3)(F/S). A study of causes and solutions for problems occurring in the instrumental rehearsal. Areas to be covered include instrumental methods and techniques, organization and repertoire planning.

MUS 574 ADVANCED METHODS AND TECHNIQUES FOR THE CHORAL INSTRUCTOR (3-0-3)(F/S). A study of causes and solutions for problems occurring in the choral rehearsal. Areas to be covered include vocal methods and techniques, organization and repertoire planning.

MUS 576 HISTORY AND PHILOSOPHY OF MUSIC EDUCATION (3-0-3)(F/S). Includes both an introduction to the history of music education in the United States, from colonial New England to the present; and alternate views about the philosophy of music, including aesthetic experience, aesthetic education, and the nature and meaning of music.

Refer to the *University-wide Graduate Courses* section in this catalog for additional course offerings.

Department of Physics

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Graduate Degrees Offered

- Doctor of Philosophy in Biomolecular Sciences (See Interdisciplinary Programs)
- Doctor of Philosophy in Materials Science and Engineering (See Interdisciplinary Programs)
- Master of Engineering in Materials Science and Engineering (See Interdisciplinary Programs)
- Master of Science in Materials Science and Engineering (See Interdisciplinary Programs)

General Information

The Department of Physics is a primary participant in the offering of the master's and doctoral programs in materials science and engineering, and the doctoral program in biomolecular sciences. Please see the interdisciplinary program section of this catalog for further details.

Course Offerings

See *Course Numbering and Terminology* for definitions.

PHYS — Physics

PHYS 512 INTERMEDIATE QUANTUM MECHANICS (4-0-4)(F).

Fundamentals, including properties and solutions of the Schroedinger equation, operators, angular momentum, electron spin, identical particles, perturbations, and variational principle. Applications, such as tunneling, orbitals, magnetic resonance, and nanoscale effects. PREREQ: Graduate standing, PHYS 309.

PHYS 515 SOLID STATE PHYSICS (3-0-3)(S). Quantum physics applied to understanding the properties of materials, including semiconductors, metals, superconductors, and magnetic systems. PREREQ: Graduate standing, PHYS 309.

PHYS 523 PHYSICAL METHODS OF MATERIALS CHARACTERIZATION (3-0-3)(F). Physical principles and practical methods used in determining the structural, electronic, optical, and magnetic properties of materials. Optical, electron, and scanning microscopies, diffraction, surface analysis, optical spectroscopy, electrical transport, and magnetometry. PREREQ: Graduate Standing, PHYS 309.

PHYS 530 OPTICS (3-0-3)(S). Geometrical and physical optics, including lenses, fiber optics, Fourier optics, polarization, interference, diffraction, lasers, and holography. PREREQ: Graduate standing, PHYS 309. COREQ: PHYS 530L.

PHYS 530L OPTICS LABORATORY (0-3-1)(S). Laboratory to be taken concurrently with PHYS 330. Experiments in optics, including optical systems, thick lenses, interference, diffraction, Fourier optics, image processing, and holography. COREQ: PHYS 530.

PHYS 532 THERMAL PHYSICS (4-0-4)(F). Foundations and applications of thermodynamics and statistical mechanics, including temperature, entropy, heat capacity, chemical potential, and free energies. Applications to gases, paramagnets, chemical systems, electrons, photons, phonons, and superfluids. PREREQ: Graduate standing, PHYS 309.

PHYS 536 SOFT MATTER (3-0-3)(F)(Odd years). Introduction to the physical principles underlying the properties and behaviors of soft matter, including polymers, gels, colloids, and liquid crystals. Examples of soft matter include glues, paints, soaps, rubber, foams, gelatin, milk, and most materials of biological origin. (Recommended preparation: PHYS 309.) PREREQ: Graduate standing, MATH 275, PHYS 212, and either CHEM 322 or MSE 308 or PHYS 432.