School of Music

Joanna Bosse, Interim Head Location: Hall of Arts 102 www.cmu.edu/cfa/music (http://www.cmu.edu/cfa/music/)

The School of Music at Carnegie Mellon University offers the best aspects of conservatory training within a great university, combining preparation for a lifetime in performance, composition, electronic music, or music and technology with the advantages of learning in an intense academic environment. Every student in the School of Music is a performance, composition, electronic music, or music and technology major. The School of Music is an accredited institutional member of the National Association of Schools of Music.

Each performance major is challenged to develop through individual instruction with a master teacher. The School's relationship with the renowned Pittsburgh Symphony Orchestra is among the strongest conservatory-symphony orchestra relationships in the United States, and Pittsburgh's uniquely strong sense of musical community fosters close relationships with the Pittsburgh Opera, Pittsburgh Chamber Music Society, and a host of other professional musical organizations.

Regular performing ensembles include the Carnegie Mellon Philharmonic, Wind Ensemble, Bagpipe and Drum Band, Baroque Ensemble, Contemporary Ensemble, Exploded Ensemble, Jazz Orchestra, Jazz Vocal Ensemble, Chorus, and Opera. Some of the School's ensembles are instrument specific: Chamber Music ensembles and the Percussion Ensemble, among others. Opportunities for performance are stressed – undergraduate performance majors perform junior and senior recitals, chamber music is publicly presented, frequent performance opportunities on and off campus are provided, and community outreach is vigorously supported.

The School of Music has an intense commitment to new music, led by composition faculty, conductors who devote fully rehearsed cycles of the Philharmonic to works by student composers, and studio faculty whose own performing careers regularly feature new works, and including regular performances of student works in almost every Contemporary Ensemble Program, frequent opportunities with the Wind Ensemble and Chorus, and inclusion on student recitals. The School's state-of-the-art recording facilities are an especially important resource for composers beginning their public careers.

All teaching is entrusted to professional faculty — there are no assistant studio teachers or doctoral teaching fellows — and specialists in Musicology, Theory, Analysis, Counterpoint, Composition, Computer Music, Electronic Music, Eurhythmics, Solfege, Music Education, Pedagogy, Collaborative Piano and Coaching, Acting and Movement, Diction, Literature and Repertoire, Baroque Music, Chamber Music, Conducting, and Sound Recording and Production provide a broad and rich platform for comprehensive musical preparation. At the same time, the university provides the greatest possible support for students combining their majors with minors in all disciplines, unique joint degree programs, and double major programs. These opportunities significantly increase a student's career options and marketability in the changing professional world of music.

School of music Facilities

The teaching facilities of the School of Music are located on the ground, main, and mezzanine floors of the College of Fine Arts, on the ground, main, and second floors of the Hall of Arts, on the first floor of Margaret Morrison Hall, and in WQED Studio B. Teaching, rehearsal, and practice rooms are equipped with Steinway pianos. Music students also have access to a state-of-the-art recording studio and music technology cluster. Performances take place in Kresge Recital Hall, Carnegie Music Hall, Alumni Concert Hall, and Mellon Institute Auditorium. The Hunt Library houses a fine collection of books, records, and scores. Listening and conference rooms are also available in the library.

School of Music Options

The School of Music offers a Bachelor of Fine Arts in the following areas:

- Performance (Instrumental, Organ, Piano, Voice)
- Composition
- Electronic Music

The School of Music jointly with the School of Computer Science and the Carnegie Institute of Technology offers a Bachelor of Science in the following area:

· Music and Technology

To earn a Bachelor's degree in any of these options, a candidate must satisfactorily fulfill all the requirements of the School of Music.

Within the options listed above eligible students may elect specializations in the following areas:

- · Dalcroze Eurhythmics Certificate
- · Piano Pedagogy Certificate
- · Collaborative Piano Minor
- · Conducting Minor
- · Music Education Minor
- · Music Technology Minor
- Music Theory Minor
- · Sonic Arts Minor

Dalcroze Eurhythmics Certificate

This program is designed to prepare teachers in the Dalcroze approach to music learning. The course of study includes eurhythmics, piano improvisation, and Dalcroze pedagogy. Carnegie Mellon undergraduates may enter the Dalcroze Training Program during their junior year. However, the certificate will be granted only upon completion of their undergraduate degree. This program is recommended particularly to students who would like to incorporate Dalcroze principles into their teaching and to those who want to obtain more experience in this field.

Piano Pedagogy Certificate

A two-year program leading to certification in piano pedagogy is open to current Carnegie Mellon keyboard majors. They learn to teach piano in a closely supervised environment of class piano instruction. This program has received national acclaim as a model of excellence, with Carnegie Mellon children consistently capturing prestigious awards in national piano competitions.

Collaborative Piano Minor

The collaborative piano minor consists of a six-semester sequence of courses designed to give the students experience with instrumentalists and vocalists. There are individual coaching sessions as well as practical experience in instrumental and vocal studios.

Conducting Minor

This minor is designed for students who are interested in acquiring conducting skills, in anticipation of either graduate study in conducting or a music education career. It includes required courses in conducting techniques for both choral and instrumental ensembles, orchestration, score reading/keyboard harmony, and elective courses in instrumental and vocal methods, diction, and literature and repertoire.

Music Education Minor

This minor is designed for students who are interested in music education, who may wish to complete the requirements for music education certification. Students who complete the requirements for music education certification and pass the Praxis tests will receive Pennsylvania state certification in music (K-12), which is recognized in almost all other states.

Music Technology Minor

The student will take a series of courses which may include electronic and computer music, recording technology, the physics of musical sound, and computer programming. A rich computer music research environment enables talented students to work as programmers with outstanding faculty researchers, whose current projects are gaining international recognition in the areas of computer music and artificial intelligence.

Music Theory Minor

This minor is designed for students who are interested in advanced theory and analysis skills, in anticipation of either graduate study in theory or graduate study that requires a substantial level of theory knowledge. The student will take advanced theory and analysis courses and also support courses in the physics of musical sound and the psychology of music.

Sonic Arts Minor

Students in this minor will explore the processes and products of digital sound and music. They will receive basic training in key component areas: principles of computer music, hybrid instrument building, concepts in sound

design. Combining this training with courses that bring together experts from many disciplines, they will create experimental music or explore new, technology-enabled, applications and markets for sound design, music creation, and performance.

Performances and Activities of the School of Music

The School of Music sponsors performances, master classes, and lectures by outstanding national and international guest artists. Announcements of faculty, student, and guest performances are published for the students and the community.

General Requirements for BFA Candidates

Candidates for the Bachelor of Fine Arts degree in composition are required to complete a composition for orchestra in their senior year.

Candidates for the Bachelor of Fine Arts degree in electronic music are required to complete an ambitious capstone project in their senior year that may take the form of an evening length concert, a multimedia experience, an interactive exhibition or app, or some other project that exhibits the student's research and creative output.

Candidates for the Bachelor of Fine Arts degree in performance are required to give public performances in their junior and senior years. Candidates for the Bachelor of Fine Arts degree in string performance are required to give public performances in their sophomore, junior, and senior years.

Candidates for the Bachelor of Fine Arts degree in performance are required to pass one semester (piano majors must pass two semesters) of a course that includes experience with pedagogy for their major studio area.

- Instrumental majors must take the class for their area to fulfill the Pedagogy Course requirement on the Instrumental curriculum (57-023 Bassoon Studio Performance Class, 57-448 Brass Pedagogy, 57-022 Clarinet Studio Performance Class, 57-018 Double Bass Studio Performance Class, 57-020 Flute Studio Performance Class, 57-021 Oboe Studio Performance Class, 57-030 Percussion Studio Performance Class, 57-016 Viola Studio Performance Class, 57-015 Violin Studio Performance Class, 57-437 Literature and Repertoire).
- Bagpipe, organ and saxophone majors must fulfill the pedagogy requirement as part of satisfying all demands outlined in their Major Studio syllabi, 57-522 Major Studio (Bagpipe), 57-502 Major Studio (Organ) and 57-514 Major Studio (Saxophone).
- Piano majors must take 57-273 Piano Pedagogy I and 57-274 Piano Pedagogy II.
- Voice majors must take 57-010 Voice Studio Performance Class.

Candidates for the Bachelor of Fine Arts degree in applied areas other than piano are required to pass a piano proficiency test.

Candidates for Bachelor of Fine Arts degrees in composition and performance are required to pass four repertoire proficiency tests, and to pass a major choral ensemble or a major instrumental ensemble as assigned and to pass Convocation every semester of residence in the School of Music.

Candidates for the Bachelor of Fine Arts degree in electronic music are required to to pass Exploded Ensemble or Contemporary Ensemble as assigned every semester of residence and to pass Convocation four semesters of residence in the School of Music.

BFA Curriculum

The music curriculum is based on the following five building blocks:

- 1. Studio
- Theory
- 3. History
- 4. Ensemble
- 5. Academics
- 1. Studio This is the heart of the school. Students receive individualized instruction with senior faculty in their major area of study: performance or composition or electronic music.
- 2. Theory These courses are designed to help students develop listening skills, to acquire theoretical knowledge, to recognize structural techniques and manipulate technological resources. It includes courses in sight-reading, ear-training, eurhythmics, harmony, contrapuntal techniques, analysis of musical forms, 20th-21st century techniques, orchestration, score reading,

and electronic and computer music. One music support course in the piano, organ, and instrumental curricula must be a theory course.

- 3. History These courses cover in depth the music of the western world and survey the styles and musical structures of non-western music.
- 4. Ensemble This area includes student participation in some of the following ensembles: Carnegie Mellon Philharmonic, Wind Ensemble, Bagpipe and Drum Band, Baroque Ensemble, Contemporary Ensemble, Exploded Ensemble, Jazz Orchestra, Jazz Vocal Ensemble, Chorus, Opera, Chamber Music ensembles, and Percussion Ensemble.
- 5. Academics The School of Music requires general studies courses (academic courses outside of the School) and elective courses for graduation. These accumulated credits may be applied to minors or majors in other disciplines. Exceptional students in good academic and musical standing within the School are permitted to take additional courses beyond the number required for graduation. There is no charge for extra credits taken at Carnegie Mellon. One elective course in the performance curricula must be a course that includes experience with pedagogy for the student's major studio area.

Minimum units required for B.F.A. in Music	
Voice majors	432
Electronic Music majors	406
Composition majors	392
Instrumental, Organ, and Piano majors	386

Piano

First Year

Fall		Units
57-100	Convocation	1
57-501	Major Studio (Piano)	9
57-4xx	Major Ensemble	6
57-196	Collaborative Piano Skills I	3
57-152	Harmony I	9
57-161	Eurhythmics I	3
57-181	Solfege I	3
57-189	Introduction to Repertoire and Listening for Musicians	3
57-101	Introduction to Music Technology	6
99-101	Computing @ Carnegie Mellon	3
76-101	Interpretation and Argument	9
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Spring		55
Spring 57-100	Convocation	55
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Second Year

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57-100	Convocation	1
57-501	Major Studio (Piano)	9
57-4xx	Major Ensemble	6
57-672	Chamber Music: Woodwind and Mixed	3
57-151	Counterpoint in Theory and Application	6
57-163	Eurhythmics III	3
57-183	Solfege III	3
57-289	Repertoire and Listening for Musicians II	3
57-284	Music History II	9

55

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S7-501								
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57-010	Voice Studio Performance Class	1
57-417	Major Vocal Performance Ensemble	6
57-xxx	Production Course	6
57-474	Survey of Vocal Repertoire II	3
XX-XXX	Elective Course	12
	<u> </u>	30

Instrumental

 $\ensuremath{\mathsf{A}}$ string major must also complete two semesters of Chamber Music in the sophomore year.

First Year

		55
XX-XXX	Global, Cultural, and Diverse Perspectives Course	9
57-283	Music History I	9
57-190	Repertoire and Listening for Musicians I	3
57-182	Solfege II	3
57-162	Eurhythmics II	3
57-153	Harmony II	9
57-191	Keyboard Studies	3
57-4xx	Major Ensemble	6
57-xxx	Studio	9
Spring 57-100	Convocation	1
		55
76-101	Interpretation and Argument	9
99-101	Computing @ Carnegie Mellon	3
57-101	Introduction to Music Technology	6
57-189	Introduction to Repertoire and Listening for Musicians	3
57-181	Solfege I	3
57-161	Eurhythmics I	3
57-152	Harmony I	9
57-191	Keyboard Studies	3
57-4xx	Major Ensemble	6
57-xxx	Studio	9
57-100	Convocation	1
Fall		Units

Second Year

Fall		Units
57-100	Convocation	1
57-xxx	Studio	9
57-4xx	Major Ensemble	6
57-191	Keyboard Studies	3
57-151	Counterpoint in Theory and Application	6
57-163	Eurhythmics III	3
57-183	Solfege III	3
57-289	Repertoire and Listening for Musicians II	3
57-284	Music History II	9
XX-XXX	General Studies Course	6
		49
Spring		
57-100	Convocation	1

57-xxx	Studio	9
57-4xx	Major Ensemble	6
57-191	Keyboard Studies	3
57-408	Form and Analysis	6
57-164	Eurhythmics IV	3

57-184	Colfogo IV	3
57-164	Solfege IV	3
57-290	Repertoire and Listening for Musicians III Music History III	9
XX-XXX	Elective Course	6
XX XXX	Elective course	49
Third Year		
Fall		Units
57-100	Convocation	1
57-xxx	Studio	9
57-4xx	Major Ensemble	6
57-xxx	Chamber Music	3
57-xxx	Music Support Course (Theory/History)	12
57-xxx	Pedagogy Course	var.
XX-XXX	General Studies Course	9
XX-XXX	Elective Couirse	6
		46
Spring		
57-100	Convocation	1
57-xxx	Studio	9
57-4xx	Major Ensemble	6
57-xxx	Chamber Music	
57-xxx	Music Support Course (Theory/History)	12
XX-XXX	General Studies Course	9
XX-XXX	Elective Course	6
		43
Fourth Year		
Fall		Units
57-100	Convocation	1
57-xxx	Studio	9
57-4xx	Major Ensemble	6
57-xxx	Chamber Music	
57-xxx	Music Support Course (Theory/History)	12
XX-XXX	General Studies Course	9
XX-XXX	Elective Course	3
		40
Spring		
57-100	Convocation	1
57-xxx	Studio	9
57-4xx	Major Ensemble	6
57-xxx	Chamber Music	
57-xxx	Music Support Course (Theory/History)	12
XX-XXX	General Studies Course	9
xx-xxx	Elective Course	3
		40

Composition

First Year

		55
76-101	Interpretation and Argument	9
99-101	Computing @ Carnegie Mellon	3
57-101	Introduction to Music Technology	6
57-189	Introduction to Repertoire and Listening for Musicians	3
57-181	Solfege I	3
57-161	Eurhythmics I	3
57-152	Harmony I	9
57-191	Keyboard Studies	3
57-4xx	Major Ensemble	6
57-521	Major Studio (Composition)	9
57-100	Convocation	1
Fall		Units

Spring			57-521	Major Studio (Composition)	9
57-100	Convocation	1	57-4xx	Major Ensemble	6
57-521	Major Studio (Composition)	9	57-xxx	Music Support Course	6
57-4xx	Major Ensemble	6	XX-XXX	General Studies Course	9
57-191	Keyboard Studies	3	XX-XXX	Elective Course	12
57-153	Harmony II	9			43
57-162	Eurhythmics II	3			
57-182	Solfege II	3	Spring		
57-190	Repertoire and Listening for Musicians I	3	57-100	Convocation	1
57-283	Music History I	9	57-521	Major Studio (Composition)	9
XX-XXX	Global, Cultural, and Diverse Perspectives	9	57-4xx	Major Ensemble	6
	Course		57-xxx	Music Support Course	6
		55	XX-XXX	General Studies Course	9
			XX-XXX	Elective Course	6
Second Ye	ear				37
Fall		Units			
57-100	Convocation	1	ELECTR	ONIC MUSIC	
57-521	Major Studio (Composition)	9			
57-321 57-4xx	Major Ensemble	6	First Year		
57-477	•	3	57-100	Convocation	1
	Keyboard Studies		57-560	Electronic Music Seminar	3
57-151	Counterpoint in Theory and Application	6	57-152	Harmony I	9
57-163	Eurhythmics III	3	57-161	Eurhythmics I	3
57-183	Solfege III	3	57-181	Solfege I	3
57-289	Repertoire and Listening for Musicians II	3	76-101	Interpretation and Argument	9
57-284	Music History II	9	57-358	Introduction to Electronic Music	9
57-257	Orchestration I	6	99-101	Computing @ Carnegie Mellon	3
XX-XXX	Elective Course	6	57-421	Exploded Ensemble	6
		55			
C			57-523	Major Studio (Electronic Music)	9
Spring	0 "		57-191	Keyboard Studies	3
57-100	Convocation	1	57-100	Convocation	1
57-521	Major Studio (Composition)	9	57-560	Electronic Music Seminar	3
57-4xx	Major Ensemble	6	57-153	Harmony II	9
57-191	Keyboard Studies	3	57-162	Eurhythmics II	3
57-408	Form and Analysis	6	57-182	Solfege II	3
57-164	Eurhythmics IV	3	18-090	Twisted Signals: Multimedia Processing for the	10
57-184	Solfege IV	3	10 030	Arts	10
57-290	Repertoire and Listening for Musicians III	3	xx-xxx	Global, Cultural, and Diverse Perspectives	9
57-285	Music History III	9		Course	
57-271	Orchestration II	6	57-421	Exploded Ensemble	6
57-258	20th-21st Century Techniques	6	57-523	Major Studio (Electronic Music)	9
		55	57-191	Keyboard Studies	3
			Second Ye		
Third Year			Second 16	ear	
Fall		Units	57-100	Convocation	1
57-100	Convocation	1	57-560	Electronic Music Seminar	3
		9	57-421	Exploded Ensemble	6
57-521	Major Studio (Composition)		57-163	Eurhythmics III	3
57-234	Performance for Composers	3	57-183	Solfege III	3
57-332	Introduction to Conducting	6	57-257	Orchestration I	6
57-347	Electronic and Computer Music	6	57-xxx	Music Elective	9
57-xxx	Music Support Course	6	57-xxx	Electronic Music support course/Special Topics	9
XX-XXX	General Studies Course	12	57-523	Major Studio (Electronic Music)	9
		43	57-191	Keyboard Studies	3
Constitution of			37-191	Reyboard Studies	J
Spring		_	57-100	Convocation	1
57-100	Convocation	1	57-560	Electronic Music Seminar	3
57-521	Major Studio (Composition)	9	57-421	Exploded Ensemble	6
57-236	Performance for Composers	3	57-408	Form and Analysis	6
57-336	Instrumental/Choral Conducting	6	57-164	Eurhythmics IV	3
57-459	Score Reading for Composition Majors and	6	57-184	Solfege IV	3
	Conducting Minors	_	57-xxx	Electronic Music support course/Special Topics	9
57-xxx	Music Support Course	6	57-523	Major Studio (Electronic Music)	9
XX-XXX	General Studies Course	12	57-191	Keyboard Studies	3
		43		General Studies Course	10
			XX-XXX		10
Fourth Yea	ar		Third Year	r	
Fall		Units	57-523	Major Studio (Electronic Music)	9
57-100	Convocation	1	57-560	Electronic Music Seminar	3
		-	3, 300	sea onto . radio dell'illiai	5

F7 222	Internal vetice to Conduction	
57-332	Introduction to Conducting	6
15-104	Introduction to Computing for Creative Practice	10
57-xxx	Electronic Music support course/Special Topics	9
57-421	Exploded Ensemble	6
57-173	Survey of Western Music History	9
57-188	Repertoire and Listening for Musicians	1
57-523	Major Studio (Electronic Music)	9
57-560	Electronic Music Seminar	3
57-344	Experimental Sound Synthesis	9
57-359	Audiovisual Composition	9
57-xxx	Electronic Music support course/Special Topics	9
57-421	Exploded Ensemble	6
xx-xxx	General Studies Course	10
Fourth Year		
57-523	Major Studio (Electronic Music)	9
57-560	Electronic Music Seminar	3
57-421	Exploded Ensemble	6
57-xxx	Electronic Music support course/Special Topics	9
XX-XXX	General Studies Course	12
57-xxx	Music Elective	9
57-523	Major Studio (Electronic Music)	9
57-560	Electronic Music Seminar	3
57-421	Exploded Ensemble	6
57-xxx	Electronic Music support course/Special Topics	6
XX-XXX	General Studies Course	9
57-xxx	Music Elective	9
Dalcroze Eur	hythmics Certificate	33 units
57-465	Eurhythmics Applications for Performing and Teaching	6
57-466	Eurhythmics Applications for Performing and Teaching	6
57-691	Dalcroze Pedagogy/Practice Teaching	3
57-692	Dalcroze Pedagogy/Practice Teaching	3
XX-XXX	Creative Movement/Choreography	3
57-351	Dalcroze Piano Improvisation	Var.
57-641	Dalcroze Research Paper	3
57-642	Dalcroze Research Paper	3
37 012	Daicroze Nesedien raper	3
Piano Pedago	ogy Certificate	36 units
57-273	Piano Pedagogy I	6
57-274	Piano Pedagogy II	6
57-275	Piano Pedagogy III	6
57-276	Piano Pedagogy IV	6
57-429	Beginning Piano for Children I	6
57-449	Beginning Piano for Children II	6

Bachelor of Science in Music and Technology

The Bachelor of Science in Music and Technology is offered jointly by the School of Music, the School of Computer Science, and the College of Engineering.

This program consists of a set of courses that span both music and technology, as well as a capstone composition/design/performance project. Courses in all three areas of study are stipulated in the music and technology undergraduate curriculum and provide for students coming from any of the three areas. In other words, regardless of a student's entry point — an interest in computer science, electrical engineering, or music — the coursework prescribed will allow the student to gain the requisite knowledge and experience in all three areas. Students will work closely with advisors and will be guided in both course selection and capstone projects.

Curriculum

Minimum units required for B.S. in Music and Technology 380			
,			
	General Requirements 85 uni		
Seminar			
57-570	Music and Technology Seminar (8 semesters for a total of 8 units)		1
University			
99-101	Computing @ Carnegie Mellon		3
76-101	Interpretation and Argument		9
XX-XXX	Global, Cultural, and Diverse Perspectives Course		9
Humanities			
xx-xxx	Cognition, Choice and Behavior course		9
xx-xxx	English, History, Modern Languages, Philoso or Psychology course	phy,	9
Mathematics			
21-120	Differential and Integral Calculus		10
21-120	Integration and Approximation		10
	integration and Approximation		10
Science			
33-114	Physics of Musical Sound		9
33-141	Physics I for Engineering Students		12
Electives		33 or 37	units
Music Core		81	units
57-152	Harmony I		9
57-153	Harmony II		9
57-408	Form and Analysis		6
57-151	Counterpoint in Theory and Application		6
57-258	20th-21st Century Techniques		6
57-257	Orchestration I		6
57-189	Introduction to Repertoire and Listening for Musicians		3
57-190	Repertoire and Listening for Musicians I		3
57-289	Repertoire and Listening for Musicians II		3
57-290	Repertoire and Listening for Musicians III		3
57-181	Solfege I		3
57-182	Solfege II		3
57-183	Solfege III		3
57-184	Solfege IV		3
57-161	Eurhythmics I		3
57-162	Eurhythmics II		3
57-173	Survey of Western Music History		9
Music and Te	echnology Core	121	units
15-112	Fundamentals of Programming and Compute Science	er	12
15-122	Principles of Imperative Computation		12
15-322	Introduction to Computer Music		9
18-100	Introduction to Electrical and Computer Engineering		12
18-202	Mathematical Foundations of Electrical Engineering		12
18-290	Signals and Systems		12
57-101	Introduction to Music Technology		6
57-347	Electronic and Computer Music		6
57-337	Sound Recording		6
57-338	Sound Editing and Mastering		6
57-438 57-571	Multitrack Recording		9 12
57-571 57-572	Music and Technology Project Music and Technology Project		12 12
31-312	masic and reciniology Froject		12

Concentration

Students complete either the Music Concentration or the Technical Concentration:

Music Concentration		60 units
57-5xx	Studio (4 semesters)	36
57-4xx	Major Ensemble (4 semesters)	24
Technical Co	ncentration	58 or 56 units
21-127	Concepts of Mathematics	12
15/18-213	Introduction to Computer Systems	12
AND EITHER:		
18-220	Electronic Devices and Analog Circuits	12
18-240	Structure and Design of Digital Systems	12
15-2xx/18-3xx	Electives in ECE or CS	12
or above		
OR:		
15-210	Parallel and Sequential Data Structures and Algorithms	12
15-323	Computer Music Systems and Information Processing	9
15-2xx/18-3xx	Electives in ECE or CS	12
or above		

Minors

Minor in Collaborative Piano for Piano Majors in the School of Music

Admission Requirements:

The student must apply to enter the program in the office of the Director of Student Services (HOA 141A).

36 unitsRequired Courses

57-381	Collaborative Piano I	6
57-382	Collaborative Piano II	6
57-383	Collaborative Piano III	6
57-384	Collaborative Piano IV	6
57-385	Collaborative Piano V	6
57-386	Collaborative Piano VI	6

18 unitsElectives

(choose from the following courses)

(0.10000 110111 1.	ic ronorming courses,		
57-220	English Diction	3	
57-221	Italian Diction	3	
57-222	French Diction	3	
57-223	German Diction	3	
57-332	Introduction to Conducting	6	
57-336	Instrumental/Choral Conducting	6	
57-431	Italian Literature and Repertoire	3	
57-432	French Literature and Repertoire	3	
57-433	Musical Theatre Literature and Repertoire	3	
57-434	Musical Theatre Literature and Repertoire	3	
57-435	German Literature and Repertoire	3	
57-436	English/Contemporary Literature and Repertoire	3	
57-459	Score Reading for Composition Majors and Conducting Minors	6	
57-607	Vocal Methods	3	
Minimum units required for Collaborative Piano Minor: 54			

Minor in Conducting for Students in the School of Music

Admission Requirements:

- 1. The student must apply to enter the program in the office of the Director of Student Services (HOA 141A).
- 2. A 3.0 cumulative overall QPA and good academic standing are required.
- 3. In addition to passing the prerequisite courses listed below, the student must display superior solfege skills, by passing Advanced Solfege I and II with "A" or "B" grades or by passing Solfege I and II with "A" or "B" grades and with the recommendation of the student's solfege instructor; and the student must also pass Introduction to Conducting with an "A" grade or with a "B" grade and with the recommendation of the student's conducting instructor.

ACADEMIC REQUIREMENTS:

- Immediately after acceptance into the minor in conducting, the student must schedule an advising appointment with the faculty supervisor of the conducting minor.
- Instrumental/Choral Conducting must be completed before the senior year with an "A" grade or with a "B" grade and with the recommendation of the student's conducting instructor before the student can register for the advanced conducting courses (see #3).
- Conducting Practicum must be taken during the same semester as Independent Study in Conducting. Both courses must be taken after completing Introduction to Conducting and Instrumental/Choral Conducting.
- A 3.0 cumulative overall QPA is required for graduation with the minor in conducting.

30 unitsPrerequisite Courses

57-152	Harmony I	9
57-153	Harmony II	9
57-161	Eurhythmics I	3
57-162	Eurhythmics II	3
57-189	Introduction to Repertoire and Listening for Musicians	3
57-191	Keyboard Studies	3

39 unitsRequired Courses

Choose two of the following five courses immediately below as recommended by the faculty supervisor of the conducting minor:

57-360	Brass Methods	3
57-361	Percussion Methods	3
57-362	Woodwind Methods	3
57-363	String Methods	3
57-557	Vocal Methods	3
57-332	Introduction to Conducting	6
57-336	Instrumental/Choral Conducting	6
57-257	Orchestration I	6
57-459	Score Reading for Composition Majors and Conducting Minors	6
57-364	Conducting Practicum	3
57-618	Independent Study in Conducting	6

15 unitsElectives

(choose from the following courses)

57-220	English Diction	3
57-221	Italian Diction	3
57-222	French Diction	3
57-223	German Diction	3
57-258	20th-21st Century Techniques	6
57-337	Sound Recording	6
57-338	Sound Editing and Mastering	6
57-431	Italian Literature and Repertoire	3
57-432	French Literature and Repertoire	3
57-435	German Literature and Repertoire	3
57-607	Vocal Methods	3
57-491	Solfege for Conductors I	3

57-492	Solfege for Conductors II	3
57-227	Jazz Instrumental Ensemble	3
57-230	Baroque Ensemble	3
57-231	Chamber Ensemble	3
57-420	JIVE - CMU Jazz Choir	3
57-423	Repertoire Orchestra	3
Minimum units required for Conducting minor:		

Minor in Music Education for Students in the School of Music

Admission Requirements:

The student must apply to the music education faculty no earlier than spring of the freshman year.

Corequisite	General Courses	45 units
76-101	Interpretation and Argument	9
21-xxx	Mathematics Course #1	9
21-xxx	Mathematics Course #2	9
76-xxx	English Literature Course	9
Corequisite	Music Courses	18 units
57-391	Keyboard Studies (Music Ed)	3
57-392	Keyboard Studies (Music Ed)	3
57-393	Keyboard Studies Test (Music Ed)	0
57-332	Introduction to Conducting	6
57-336	Instrumental/Choral Conducting	6
General Edu	cation Courses	36 units
57-331	Principles of Education	9
57-643	Diverse Populations in Inclusive Settings	9
Music Educa	tion Methods Courses	48 units
	tion Methods Courses hods Courses	48 units
		48 units
General Met	hods Courses	
General Met	hods Courses Music in the Elementary School	6
General Met 57-375 57-356	hods Courses Music in the Elementary School Elementary Guided Teaching	6
General Met 57-375 57-356 57-376 57-355	hods Courses Music in the Elementary School Elementary Guided Teaching Music in the Secondary School	6 3
General Met 57-375 57-356 57-376 57-355	hods Courses Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching	6 3
General Met 57-375 57-356 57-376 57-355 Applied Area	Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching Methods Courses	6 3 6 3
General Met 57-375 57-356 57-376 57-355 Applied Area 57-207	Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching Methods Courses Music Studio	6 3 6 3 Var.
General Met 57-375 57-356 57-376 57-355 Applied Area 57-207 57-360	Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching Methods Courses Music Studio Brass Methods	6 3 6 3 Var.
General Met 57-375 57-356 57-376 57-355 Applied Area 57-207 57-360 57-361	Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching Methods Courses Music Studio Brass Methods Percussion Methods	6 3 6 3 Var.
General Met 57-375 57-356 57-376 57-355 Applied Area 57-207 57-360 57-361 57-363	Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching Methods Courses Music Studio Brass Methods Percussion Methods String Methods	6 3 6 3 Var. 3 3
General Metils 57-375 57-356 57-376 57-355 Applied Area 57-207 57-360 57-361 57-363 57-362	Music in the Elementary School Elementary Guided Teaching Music in the Secondary School Secondary Guided Teaching Methods Courses Music Studio Brass Methods Percussion Methods String Methods Woodwind Methods Vocal Methods	6 3 6 3 Var. 3 3 3

Fundamentals of Marching Band is required. Stage Direction is optional

57-334	Fundamentals of Marching Band	3
57-370	Stage Direction	3
57-333	Band and Choral Arranging	6
Music Educa	tion Teaching Courses	15 units
57-603	Practice Teaching (Elementary)	6
57-604	Practice Teaching (Secondary)	6
Minimum unit	s required for Music Education Minor:	129

Minor in Music Technology for Students in the School of Music

Admission Requirements:

The student must apply to enter the program in the office of the Director of Student Services (HOA 141A).

Prerequisite	18 units	
57-152	Harmony I	9
57-161	Eurhythmics I	3
57-181	Solfege I	3
57-189	Introduction to Repertoire and Listening for Musicians	3
Sound Reco	21 units	

Sound Recording Courses		21 units
57-337	Sound Recording	6
57-338	Sound Editing and Mastering	6
57-438	Multitrack Recording	9

Music Technology/Sound Courses (choose 3) 21 units

Choose at least three courses. One of the three courses must be either Introduction to Computer Music or Electronic and Computer Music. (Note that 15-112 is a prerequisite for 15-322; 57-101 or 57-171 is a prerequisite for 57-347.) Other courses may be taken with the permission of the music technology minor advisor.

15-104	Introduction to Computing for Creative Practice	10		
15-322	Introduction to Computer Music	9		
18-090	Twisted Signals: Multimedia Processing for the Arts	10		
33-114	Physics of Musical Sound	9		
54-166	Introduction to Sound Design for Theatre	6		
54-275	History of Sound Design	3		
54-666	Production Audio	6		
57-344	Experimental Sound Synthesis	9		
57-347	Electronic and Computer Music	6		
57-421	Exploded Ensemble	6		
57-478	Survey of Historical Recording	6		
Minimum units required for Music Technology Minor: 60				

Minor in Music Theory for Students in the School of Music

Admission Requirements:

The student must apply to enter the program in the office of the Director of Student Services (HOA 141A).

Prerequisite Courses		18 units
57-152	Harmony I	9
57-161	Eurhythmics I	3
57-181	Solfege I	3
57-189	Introduction to Repertoire and Listening for Musicians	3

Upper Level Theory Courses (choose 3) 21 unit

See theory courses on the Music Support Courses Two-Year Rotation list. It is available on the Current Students website (https://www.cmu.edu/cfa/music/current-students/). A graduate course may be taken with the permission of the instructor.

Graduate Theory Courses (choose 1) 6–9 units

See graduate theory courses on the Music Support Courses Two-Year Rotation list. It is available on the Current Students website (https://www.cmu.edu/cfa/music/current-students/). The course is to be chosen with the advisor's approval.

Support Courses		18 units
33-114	Physics of Musical Sound	9
57-377	Psychology of Music	9
Minimum u	ınits required for Music Theory Minor:	63

Sonic Arts Minor - IDeATe

Sonic Art is a creative expression that uses sound as its primary medium. Just as visual artists create landscapes, portraits, and narratives through

light, color, and form, sonic artists craft transformative experiences through sound, noise, and music.

Students in the *Sonic Arts* minor explore the processes and products of digital sound design and music production. They receive basic training in key component areas: principles of computer music, sound synthesis, spatialization, and core practices in sound design. Combining this training with courses that bring together experts from many disciplines, they create experimental music and explore emerging applications and markets for sound design, music creation, and performance.

Curriculum

One Computing Course - Minimum of 9 Units

		Units
15-104	Introduction to Computing for Creative Practice	10
15-110	Principles of Computing	10
15-112	Fundamentals of Programming and Computer Science	12
60-212	Intermediate Studio: Creative Coding	12
One IDeAT	e Portal Course - Minimum of 9 Units	Units
18-090	Twisted Signals: Multimedia Processing for the Arts Other IDeATe Portal Course by permission only. Consult the IDeATe advisor.	10

IDeATe Sonic Arts Courses - Minimum of 27 Units

	Units
15-322 Introduction to Computer Music	9
33-114 Physics of Musical Sound	9
54-166 Introduction to Sound Design for Theat	re 6
54-267 Conceptual Sound Design	9
54-509 Theatrical Sound System Design 2	9
57-337 Sound Recording	6
57-344/60-407 Experimental Sound Synthesis	9
57-347 Electronic and Computer Music	6
57-358 Introduction to Electronic Music portfolio required for registration	9
57-359 Audiovisual Composition	9
57-421 Exploded Ensemble	6
57-458 Business of Music	6

Additional course options as available. Please refer to the IDeATe website for courses for the current and upcoming semester.

Double-Counting

Students may double-count up to two of their $Sonic\ Arts$ minor courses for other requirements.

Full-Time Faculty

FREIDA ABTAN, Assistant Professor of Electronic Music Composition - Ph.D., Brown University; Carnegie Mellon, 2021-

CHRISTOPHER ALLEN, Artist Lecturer in Percussion – M.M., Temple University;

ALBERTO ALMARZA, Associate Professor of Flute – M.F.A., Carnegie Mellon University; Carnegie Mellon, 1991–

DONNA AMATO, Artist Lecturer in Piano and Staff Pianist - B.M., University of Arizona; Carnegie Mellon, 1998-

JENNIFER AYLMER, Assistant Professor of Voice – M.M, Westminster Choir College:

BRONWYN BANERDT, Artist Lecturer in Chamber Music – M.M., The Juilliard School:

NEAL BERNTSEN, Artist Lecturer in Trumpet - M.M., Northwestern University; Carnegie Mellon, 2003-

JOANNA BOSSE, Interim Head and Visiting Professor - Ph.D., University of Illinois; Carnegie Mellon, 2023-

JEREMY BRANSON, Artist Lecturer in Percussion - M.M., Temple University; Carnegie Mellon, 2009-

WILLIAM CABALLERO, Associate Teaching Professor in Horn - B.M., New England Conservatory; Carnegie Mellon, 2007-

ANDRES CARDENES, Dorothy Richard Starling and Alexander Speyer, Jr. University Professor of Violin Carnegie Mellon, 1989–

ANDREW CARLISLE, Director of Piping

L. MARK CARVER, Associate Teaching Professor in Collaborative Piano – M.M., Carnegie Mellon University; Carnegie Mellon, 1995–

TATJANA CHAMIS, Artist Lecturer in Viola - B.M., Curtis Institute of Music; Carnegie Mellon. 2016-

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