

Engineering and Arts, Additional Major

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Engineering and Arts Additional Major

The Engineering and Arts (EA) additional major combines the strengths of the College of Fine Arts (CFA) and the College of Engineering (ENG). This additional major provides students with formal practice and training in the creative arts that is more robust than a minor, as well as the foundation of interdisciplinary research to accomplish the integration of their interests. Students who currently have a primary major in engineering, choose their arts concentration from the following schools in CFA: Architecture (<http://coursecatalog.web.cmu.edu/intercollegeprograms/bxaintercollege/engineering-arts-additional-major/#bha-arch>), Art (<http://coursecatalog.web.cmu.edu/intercollegeprograms/bxaintercollege/engineering-arts-additional-major/#bha-art>), Drama (<http://coursecatalog.web.cmu.edu/intercollegeprograms/bxaintercollege/engineering-arts-additional-major/#bha-drama>) or Music. (<http://coursecatalog.web.cmu.edu/intercollegeprograms/bxaintercollege/engineering-arts-additional-major/#bha-music>)

The EA curriculum has two main components: BXA requirements (<http://coursecatalog.web.cmu.edu/intercollegeprograms/bxaintercollege/engineering-arts-additional-major/#ea-bxa>) and fine arts concentration requirements (<http://coursecatalog.web.cmu.edu/intercollegeprograms/bxaintercollege/engineering-arts-additional-major/#fineartsreq>). Each student's course of study is structured so it can be completed alongside their primary engineering major.

Students receive extensive advising support. The academic advisors in the BXA Intercollege Degree Programs are the advisors and liaisons between CFA and Engineering. Each student has two additional academic advisors: an advisor in the admitting school of CFA to guide their focus in the arts and their primary advisor in Engineering to guide their full major in engineering.

EA Curriculum

	Units
I. BXA Requirements	36
II. CFA Concentration	108-144
Total EA Additional Major Requirements	144-180

BXA Requirements

BXA Required Courses (5 courses, 36 units)

BXA-specific courses give students the opportunity to integrate their areas of concentration by focusing on interdisciplinary approaches and arts-based research techniques.

	Units
52-190 BXA Seminar I: Building the Wunderkammer - Spring, First-year (mini-3)	4.5
52-291 BXA Seminar II: Transferring Knowledge -Spring, Sophomore year (mini-4)	4.5
52-392 BXA Seminar III: Deconstructing Disciplines - Spring, Junior year	9
52-401 BXA Seminar IV: Capstone Project Research -Fall, Senior year	9
52-402 BXA Seminar V: Capstone Project Production - Spring, Senior year	9

EA College of Fine Arts Concentration Requirements

BXA Architecture Concentration

(108 units minimum)

Architecture Required Courses (9 courses, 57 units minimum)

48-100	Architecture Design Studio: Core 1 - Foundations -Fall, First-year or Sophomore year	10-15
or 48-095	Spatial Concepts for Non-Architecture Majors	
48-104	Shop Skills -Fall, First-year	2
48-119	Design Ethics & Social Justice in Architecture - Fall, First-year or Sophomore year	3
48-120	Digital Media I -Fall, First-year	6
48-121	Drawing I -Fall, First-year	6
48-125	Digital Media II -Spring, First-year	6
48-126	Drawing II -Spring, First-year	6
48-240	History of World Architecture, I -Spring, First-year	9
48-241	Modern Architecture: History & Theory -Spring, Sophomore year	9

Architecture Electives (51 units minimum)

A minimum of **51** additional Architecture units must be approved by the Architecture advisor. A list of these selected courses must be filed in the BXA office. 48-025 First Year Seminar: Architecture Edition (3 units) is recommended in fall of the first year.

BXA Art Concentration

(144 units minimum)

First-Year Seminar (1 course, 6 units)

60-104	Foundations: Art First-Year Seminar	6
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Foundation Studios (3 courses, 30 units)

Complete three courses:

60-110	Foundations: Time-Based Media	10
60-120	Foundations: Digital Media	10
60-131	Foundations: Sculpture	10
60-135	Foundations: Sculpture II	10
60-150	Foundations: Drawing	10
60-170	Foundations: Paint/Print	10

Intermediate Studios (3 courses, 30 units)

Complete three courses:

60-2xx	Intermediate Studio Elective	10
60-2xx	Intermediate Studio Elective	10
60-2xx	Intermediate Studio Elective	10

Advanced Studios (6 courses, 60 units)

Students may take courses in any media area (ETB, SIS, SP or DP3). They may take all courses in one media area if a focus is desired. With approval from the concentration advisor, BXA students can take an additional intermediate studio in lieu of an advanced studio to increase breadth.

Complete six courses:

60-402	Senior Studio	10
60-403	Advanced Critique Seminar	10
	Advanced Electronic and Time-Based Work (ETB) (course numbers 60-410 through 60-429)	10
	Advanced Sculpture, Installation and Site-Work (SIS) (course numbers 60-430 through 60-447)	10
	Advanced Social Practice (SP) (course numbers 60-448 through 60-449)	10
	Advanced Drawing, Painting, Print Media and Photography (DP3) (course numbers 60-450 through 60-498)	10
60-499	Studio Independent Study (one only)	10

* Courses offered intermittently; speak with the concentration advisor to determine course availability.

Critical Studies (2 courses, 18 units)

60-107	Foundations: Critical Studies -Spring	9
60-3xx	Critical Studies Elective	9

Review Requirement (1 required review, 0 units)

Complete required review:

60-200	Sophomore Review -Spring (pass/no pass)	0
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BXA Drama Concentration

(130 units minimum)

Dramaturgy is the only available option for BXA.

Dramaturgy Required Courses (13 courses, 80 units)

54-177	Foundations of Drama I -Fall, First-year	6
54-109	Dramaturgy 1: Approaches to Text -Fall, First-year	9
54-284	Fundamentals of Directing -Fall, First-year	6
54-200	Dramaturgy Forum -Fall, First-year	1
54-159	Production Practicum -Fall or Spring, First-year	6
54-281	Foundations of Drama II -Spring, First-year	6
54-184	Dramaturgy 2: Introduction to Production Dramaturgy -Spring, First-year	9
54-200	Dramaturgy Forum -Spring, First-year	1
54-117	Design Collaboration Project -Spring, First-year	3
54-241	Dramaturgy 3: Dramaturgy in Translation -Fall, Sophomore year	9
54-256	Dramaturgy 4: New Play Dramaturgy -Spring, Sophomore year	9
54-247	Dramaturgy 5: In Company -Fall, Junior year	9
54-381	Special Topics in Drama	6

Dramaturgy Electives (50 units minimum)

A minimum of **50** additional Dramaturgy units taken in the sophomore year or later must be approved by the Dramaturgy faculty area chair. A list of these selected courses must be filed in the BXA office.

BXA Music Concentration

(108 units minimum)

Options available in the following areas: 1) Music Composition, 2) Music Performance (instrumental, organ, piano, voice), 3) Music Technology: Audio Recording & Production, 4) Music Technology: Sound Theory & Practice

Music Composition Required Courses (13 courses, 85 units)

57-152	Harmony I	9
or 57-149	Basic Harmony I	
57-161	Eurhythmics I (recommended co-requisite: 57-181)	3
57-181	Solfege I	3
or 57-180	Basic Solfege I	
or 57-185	Advanced Solfege I	
57-173	Survey of Western Music History (co-requisite: 57-188)	9
57-188	Repertoire and Listening for Musicians	1
57-49x	BXA Studio (4 semesters)	36
57-xxx	Major Ensemble (4 semesters)	24

Music Composition Electives (23 units minimum)

A minimum of **23** additional Music units must be approved by the Music advisor. A list of these selected courses must be filed in the BXA office.

Music Performance Required Courses (13 courses, 85 units)

57-152	Harmony I	9
or 57-149	Basic Harmony I	
57-161	Eurhythmics I (recommended co-requisite: 57-181)	3
57-181	Solfege I	3
or 57-180	Basic Solfege I	
or 57-185	Advanced Solfege I	
57-173	Survey of Western Music History (co-requisite: 57-188)	9
57-188	Repertoire and Listening for Musicians	1

57-49x	BXA Studio (4 semesters)	36
57-xxx	Major Ensemble (4 semesters)	24

Music Performance Electives (23 units minimum)

A minimum of **23** additional Music units must be approved by the Music advisor. A list of these selected courses must be filed in the BXA office.

Music Technology: Audio Recording & Production Required Courses (8 courses, 49 units)

57-152	Harmony I	9
or 57-149	Basic Harmony I	
57-101	Introduction to Music Technology	6
57-181	Solfege I	3
or 57-180	Basic Solfege I	
or 57-185	Advanced Solfege I	
57-173	Survey of Western Music History (co-requisite: 57-188)	9
57-188	Repertoire and Listening for Musicians	1
57-337	Sound Recording	6
57-338	Sound Editing and Mastering	6
57-438	Multitrack Recording	9

Audio Recording & Production Electives (59 units minimum)

Choose **59** units from:

57-153	Harmony II	9
or 57-150	Basic Harmony II	
57-182	Solfege II	3
or 57-186	Advanced Solfege II	
10-301	Introduction to Machine Learning	12
15-104	Introduction to Computing for Creative Practice	10
15-213	Introduction to Computer Systems	12
15-322	Introduction to Computer Music	9
33-114	Physics of Musical Sound	9
54-166	Introduction to Sound Design for Theatre	6
54-666	Production Audio (section B)	4
57-161	Eurhythmics I	3
57-162	Eurhythmics II	3
57-344	Experimental Sound Synthesis	9
57-347	Electronic and Computer Music	6
57-358	Understanding Electronic Music (with instructor permission as space allows)	9
57-421	Exploded Ensemble	6
57-427	Advanced Seminar in Film Musicology	9
57-478	Survey of Historical Recording	6
57-622	Independent Study in Sound Recording Production	3
60-131	Foundations: Sculpture	10
85-415	Auditory Perception: Sense of Sound	9

Note: Students completing an IDEaTe minor may double-count up to two of the IDEaTe minor courses towards the Audio Recording & Production concentration.

Music Technology: Sound Theory & Practice Required Courses (7 courses, 44 units)

57-152	Harmony I	9
or 57-149	Basic Harmony I	
57-101	Introduction to Music Technology	6
57-181	Solfege I	3
or 57-180	Basic Solfege I	
or 57-185	Advanced Solfege I	
57-173	Survey of Western Music History (co-requisite: 57-188)	9
57-188	Repertoire and Listening for Musicians	1
57-421	Exploded Ensemble	6

Sound Theory & Practice Electives (64 units minimum)

Choose **64** units from:

57-153	Harmony II	9
or 57-150	Basic Harmony II	
57-182	Solfege II	3

or 57-186	Advanced Solfege II	
15-104	Introduction to Computing for Creative Practice	10
15-322	Introduction to Computer Music (prerequisite: 15-112)	9
33-114	Physics of Musical Sound	9
57-161	Eurhythmics I	3
57-162	Eurhythmics II	3
57-337	Sound Recording	6
57-338	Sound Editing and Mastering	6
57-344	Experimental Sound Synthesis	9
57-347	Electronic and Computer Music (prerequisite: 57-101 or 57-171)	6
57-358	Understanding Electronic Music (with instructor permission as space allows)	9
57-438	Multitrack Recording	9
57-478	Survey of Historical Recording	6
57-616	Independent Study in Sound Studies	9

Note: Students completing an IDEATe minor may double-count up to two of the IDEATe minor courses towards the Sound Theory & Practice concentration.