# Minors Offered by the College of Fine Arts

The College of Fine Arts offers minors in Architecture, Art, Design, Drama, and Music to students from other colleges at Carnegie Mellon University. These minors allow students at Carnegie Mellon to take courses and develop a direction for electives in any of the five schools in CFA. Students in the College of Fine Arts may also earn minors outside of their major within other schools in the College. They may also study any of the minors offered by the other colleges to the University at large, thus taking advantage of the broad educational opportunities available at Carnegie Mellon University.

## Minors Offered by the College of Fine Arts:

- Architectural Design Fabrication (available only to B. Arch candidates)
- Architectural Representation and Visualization (available also to B. Arch candidates)
- Architectural Technology
- Architecture
- Architecture History (available also to B. Arch candidates)
- Art
- Building Science (available only to B. Arch candidates)
- Collaborative Piano (available only to Piano majors in the School of Music)
- Conducting (available only to students in the School of Music)
- Design
- Drama
- History of the Arts
- Media Design (IDeATe)
- Music
- Music Education (available only to students in the School of Music)
- Music Technology
- Music Theory
- Musicology
- Photography
- Sonic Arts (IDeATe)
- Sound Design (IDeATe)

Guidelines for students are: 1) except where so designated, CFA students are not eligible to earn a minor in their own school; students from outside CFA may earn a minor in any school in CFA; 2) faculty advisors in the student's home school (in consultation with the academic officer of the other unit involved) will advise students as to the structuring of the courses in each minor; 3) a minor is not to be considered an overload; rather, through the assistance of faculty advisors it should be integrated into a student's overall units required for graduation; 4) the advisors will also monitor the student's development in these minors and keep records in their files which indicate the fulfillment of the course requirements in the minors, as well as in the majors in the student's own school. Courses listed as possible for the minors may be available, but not all courses are offered every semester. Students should consult with their advisors.

Students interested in earning a minor in any of the CFA schools should contact: Architecture: Heather Workinger; Art: Keni Jefferson; Design: Melissa Cicozi; Drama: Amy Nichols; Music: Sharon Johnston.

## Minors under Architecture

### Minor in Architecture

This sequence is for candidates who intend to develop intellectual links to the architectural profession. The scope of courses offered includes a full spectrum of professional issues in architecture.

#### Prerequisite Courses                                      9 units

| 79-104 | Global Histories | 9 |
|---|---|---|
| or 62-110 | Passport to the Arts | |

#### Required Courses                                    18–21 units

| 48-100 | Architecture Design Studio: Foundation I | 12 |
|---|---|---|
| or 48-095 | Spatial Concepts for Non-Architects I | |

| 48-240 | Historical Survey of World Architecture and Urbanism I | 9 |
|---|---|---|

#### Elective Courses*                                         27 units

| 48-120 | Digital Media I | 6 |
|---|---|---|
| 48-121 | Drawing I | 6 |
| 48-125 | Digital Media II | 6 |
| 48-126 | Drawing II | 6 |
| 48-126 | Drawing II | 6 |
| 48-175 | Descriptive Geometry | 9 |
| 48-215 | Materials and Assembly | 9 |
| 48-351 | Human Factors in Architecture | 9 |
| 48-324 | Structures/Statics | 9 |
| 48-452 | Real Estate Design and Development | 6 |
| 48-453 | Urban Design Methods | 6 |
| 48-383 | Ethics and Decision Making in Architecture | 6 |
| 48-xxx | Architecture History (Pre-Approval of coursework required) | 9 |
| 48-xxx | Architecture Elective (Pre-Approval of coursework required) | 9 |

**Minimum Units: 54**

*Students should consult the Architecture advisor regarding elective choices.

### Minor in Architecture History

(available also to B. Arch Candidates)

This sequence is intended for candidates interested in the history of architecture in its many manifestations, including high style and vernacular buildings, western and non-western traditions, built and theoretical works, and rural to urban contexts.  Non-architecture majors are required to take 54 units of architectural history.  Architecture majors wishing to minor in Architectural History must fulfill the three core required courses in architectural history, plus four additional architectural history electives, for a total of 63 units.  Students wishing to pursue the minor should meet with the Architecture advisor to determine if a course is eligible.

#### Required Courses                                       18 units

| 48-240 | Historical Survey of World Architecture and Urbanism I | 9 |
|---|---|---|
| 48-241 | Modern Architecture | 9 |

#### Elective Courses                              36 units/45 units

Students wishing to pursue the minor should meet with the Architecture advisor to determine course eligibility for electives.

**Minimum Units:** 54 (non architecture majors)
**Minimum Units:** 63 (architecture majors)

### Minor in Architectural Representation and Visualization

This sequence is for candidates who intend to develop particular skills in architectural representation.  The Minor in Architectural Representation and Media is intended for those students that want to deepen their knowledge in architectural representation and media and for those who are interested in gaining advanced placement (AMP) in the M.S. programs offered by the School in the areas of Computational Design, Tangible Interaction Design and/or Emerging Media. It is earned by completing the four required media courses and then an additional three elective courses in these areas. Architecture majors wishing to pursue a Minor in Architectural Representation and Visualization must complete the required 33 units and at least an additional 30 units to fulfill the minor for a total of 63 units.

#### Required Courses                                      24 units

| 48-120 | Digital Media I | 6 |
|---|---|---|
| 48-125 | Digital Media II | 6 |

| 48-121 | Drawing I | 6 |
|---|---|---|
| 48-126 | Drawing II | 6 |

## Elective Courses                                    30-39 units

| 48-568 | Advanced CAD, BIM, and 3D Visualization | 9 |
|---|---|---|
| 48-576 | Mapping Urbanism | 9 |
| 48-724 | Scripting and Parametric Design | 6 |
| 48-3xx | Architectural Drawing Elective (Pre-Approval of coursework required) | 9 |
| 48-xxx | Architectural Representation/Visualization Elective: (Pre-Approval of coursework required) | 9 |
| 48-xxx | Architectural Representation/Visualization Elective: (Pre-Approval of coursework required) | 9 |

**Minimum Units:** 54 (non-architecture majors)

**Minimum Units:** 63 (architecture majors)

# Minor in Architectural Technology

This sequence is for candidates who intend to develop intellectual links to the technical aspects of the profession.  It is not available to B. Arch Candidates.

## Prerequisite Courses                                 22 units

| 33-106 | Physics I for Engineering Students | 12 |
|---|---|---|
| 21-120 | Differential and Integral Calculus | 10 |

## Elective Courses                                    32 units

| 48-116 | Building Physics | 9 |
|---|---|---|
| 48-215 | Materials and Assembly | 9 |
| 48-324 | Structures/Statics | 9 |
| 48-315 | Environment I: Climate & Energy | 9 |
| 48-432 | Environment II: Design Integration of Active Building Systems | 9 |
| 48-752 | Zero Energy Housing | 9 |

**Minimum Units:** 54

# Minor in Building Science

(Available only to B. Arch Candidates)

The Minor in Building Science is intended for those students that want to deepen their knowledge in the building sciences and for those who are interested in gaining advanced placement (AMP) in the M.S. programs offered by the School in the areas of Building Performance & Diagnostics and Sustainable Design. It is earned by completing the two required building technology and three environmental science courses and then an additional three elective courses in the building sciences.

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## Required Course                                      12 units

| 48-722 | Building Performance Modeling | 12 |
|---|---|---|

## Elective Courses                                    45 units

| 48-795 | LEED, Green Design and Building Rating in Global Context | 6 |
|---|---|---|
| 48-721 | Building Controls and Diagnostics | 12 |
| 48-723 | Performance of Advanced Building Systems | Var. |
| 48-729 | Productivity, Health and the Quality of Buildings | 9-12 |
| 48-749 | Special Topics in CD: Critical Perspectives and Technologies | 6 |
| 48-752 | Zero Energy Housing | 9 |

**Minimum Units:** 54

# Minor in Architectural Design Fabrication

(Available only to B. Arch Candidates)

The Minor in Architectural Design Fabrication is intended for those who wish to develop focused, disciplinary expertise in both analog and digital material methods for shaping the built environment and become involved in a community of practice dedicated to a rigorous pursuit of *making* as a mode of architectural research and cultural expression. It is also for students interested in gaining advanced placement in the SoA's Master of Advanced Architectural Design (MAAD) program.sciences.

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## Required Courses                                     33 units

| 48-545 | Making Intelligence | 9 |
|---|---|---|
| 48-555 | Introduction to Architectural Robotics | 6 |
| 48-xxx | Advanced Synthesis Options Studio with Digital Fabrication Emphasis | 18 |

## Elective Courses                                     30 units

| 48-470 | Exploring Pattern Through Lamination | 9 |
|---|---|---|
| 48-473 | Hand and Machine Joinery, New Directions | 9 |
| 48-531 | Fabricating Customization: Prototype | 9 |
| 48-564 | Furniture Design & Construction | 9 |
| 48-xxx | Advanced Design Fabrication | 3-9 |
| xx-xxx | Pre-approved Design Fabrication Related Course | |

**Minimum Units:** 63

# Minors under Art

## Minor in Art

### Concept Studio (choose one) — 10 units

| | | |
|---|---|---|
| 60-101 | Concept Studio: The Self and the Human Being | 10 |
| 60-201 | Concept Studio: Space and Time | 10 |
| 60-202 | Concept Studio: Systems and Processes | 10 |
| 60-280 | Introduction to Contextual Practice | 10 |

### Media Studios (choose two) — 20 units

| | | |
|---|---|---|
| 60-110 | Electronic Media Studio: Introduction to the Moving Image | 10 |
| 60-210 | Electronic Media Studio: Introduction to Interactivity | 10 |
| 60-130-60-130 | 3-D Media Studio I-I<br>Mini 1 and Mini 2 must be in different media. | 10 |
| 60-131-60-131 | 3D Media Studio II-II<br>Mini 3 and Mini 4 must be in different media. | 10 |
| 60-150 | 2D Media Studio: Drawing | 10 |
| 60-160 | 2D Media Studio: Imaging | 10 |
| 60-250 | 2D Media Studio: Painting | 10 |
| 60-251 | 2D Media Studio: Print Media | 10 |

### Advanced Media (choose two) — 20 units

| | | |
|---|---|---|
| 60-4xx | Advanced ETB: Electives | 10 |
| 60-4xx | Advanced SIS: Electives | 10 |
| 60-4xx | Advanced DP3: Electives | 10 |
| 60-4xx | Advanced CP: Electives | 10 |

### Art History/Theory (choose one) — 9 units

| | | |
|---|---|---|
| 60-1xx | Art History Elective | 9 |
| 60-2xx | Art History Elective | 9 |
| 60-3xx | Art History Elective | 9 |

Minimum units: 59

## Minor in Media Design – IDeATe

The minor in Media Design is offered by the School of Art as part of the Integrative Design, Arts and Technology (IDeATe) network. IDeATe offers students the opportunity to become immersed in a collaborative community of faculty and peers who share expertise, experience, and passions at the intersection of arts and technology. Students will engage in active "learning by doing" in shared labs and maker spaces. The program addresses current and emerging real-world challenges that require disciplinary expertise coupled with multidisciplinary perspectives and collaborative integrative approaches.

The IDeATe undergraduate curriculum consists of eight areas, all of which can also be taken as minors. The themes of these areas integrate knowledge in technology and arts: Game Design, Animation & Special Effects, Media Design, Design for Learning, Sonic Arts, Innovation and Entrepreneurship, Intelligent Environments, and Physical Computing. For more information about the IDeATe network, please see Undergraduate Options (http://coursecatalog.web.cmu.edu/servicesandoptions/undergraduateoptions/#ideate).

In the Media Design minor, students learn to design digitally mediated experiences across different platforms, from mobile apps to large-scale installations, and for varied applications, from media for daily living to mediated performances.

### 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 |

| | | |
|---|---|---|
| 60-210 | Electronic Media Studio: Introduction to Interactivity | 10 |
| 60-212 | Electronic Media Studio: Interactivity and Computation for Creative Practice | 12 |

One IDeATe Portal Course - Minimum of 9 Units

| | | Units |
|---|---|---|
| 16-223 | IDeATe Portal: Creative Kinetic Systems | 10 |
| 18-090 | Twisted Signals: Multimedia Processing for the Arts | 10 |
| 60-223 | IDeATe: Introduction to Physical Computing | 10 |
| 62-150 | IDeATe Portal: Introduction to Media Synthesis and Analysis | 10 |
| 99-361 | IDeATe Portal | 9 |

IDeATe Media Design Courses - Minimum of 27 Units

| | | Units |
|---|---|---|
| 05/18-540 | Rapid Prototyping of Computer Systems | 12 |
| 15-294 | Special Topic: Rapid Prototyping Technologies | 5 |
| 16/54-375 | IDeATe: Robotics for Creative Practice | 10 |
| 24-672 | Special Topics in DIY Design and Fabrication | 12 |
| 48/53-558 | Reality Computing | 12 |
| 51-236 | Information Design | 9 |
| 53-312 | Guest Experience and Theme Park Design | 12 |
| 53-642 | Themed Entertainment Design Studio | 12 |
| 54-399 | Decoding Media | 6 |
| 60-110 | Electronic Media Studio: Introduction to the Moving Image | 10 |
| 60-412 | Interactive Art and Computational Design | 12 |
| 62-478 | IDeATe: digiTOOL | 6 |
| 67-240 | Mobile Web Design & Development | 9 |
| 76-285 | Team Communication | 6 |
| 76-374 | IDeATe - Dietrich College Cuban Interactive Documentary Project | 9 |

### Double-Counting

Students may double-count up to two of their Media Design minor courses toward requirements for other majors or minors.

# Minor in Design

Minoring in Design is a great way for students to diversify their studies and incorporate design skills and thinking into their overall academic experiences. Students who are already School of Design majors are not eligible to earn a Design minor. The 54 required units must be unique to the Design minor. No courses may be double counted.

## Requirements and Electives

For a design minor, students must complete 54 units: 36 units of required courses, plus 18 units of design electives.

## Required Design Courses

Both of these:

| | | |
|---|---|---|
| 51-262 | Communication Design Fundamentals: Design for Interactions for Communications<br>(formerly CDF) | 9 |
| 51-264 | Product Design Fundamentals: Design for Interactions for Products<br>(formerly IDF) | 9 |

Two of these:

| | | |
|---|---|---|
| 51-171 | Placing | 10 |
| 51-172 | Systems | 9 |
| 51-173 | Design Center: Human Experience in Design | 9 |
| 51-271 | How People Work | 9 |

Two Design Electives:

| | | |
|---|---|---|
| 51-xxx | Design Elective | 9 |
| 51-xxx | Design Elective | 9 |

**Applications**

Students must submit transcripts, personal statements, and completed applications by the beginning of February, and submit portfolios or design projects by the beginning of March. They must also obtain permission to complete minors from their major advisors. The minor application form includes detailed requirements.

Admission depends mainly on a student's demonstration of design skills and aptitude. Students are notified of acceptance by the end of March.

If you are interested in applying for the Minor in Design, please contact Design Advisor, Melissa Cicozi (cicozi@cmu.edu). You can download the Design Project and Application at www.design.cmu.edu, or paper applications are available at the School of Design office, MMCH 110.

# Minor in Drama

The Drama minor provides students with a well-rounded opportunity to obtain preliminary professional exposure to the theatre arts. Courses may involve acting, directing, playwriting, design, production technology and management, and dramatic literature courses. Students also become involved with Drama productions by signing up for Production for Non-Majors, which involves evening crew work on various Drama productions.

## Admission Requirements

1. Students must apply to enter the program in the office of the Drama Sr. Academic Advisor, Amy Nichols, PCA 223.
2. The student must successfully pass one Drama course prior to being considered for minor status.

| Required Courses | | 25 units |
|---|---|---|
| 54-163 | Production for Non Majors (needs to be taken twice for a total of 12 units) | 6 |
| 54-175/176 | Conservatory Hour | 1 |
| 54-177 | Foundations of Drama I | 6 |
| 54-281 | Foundations of Drama II | 6 |

Students must meet with the School of Drama Production Manager (PCA 224) for assignments related to Production for Non-Majors.

| Elective Courses | | 30 units |
|---|---|---|

The remainder of the minor is fulfilled with Drama courses of the student's choosing, with approval from the Director of Student Services in the School of Drama, Amy Nichols. For certain courses, students may need instructor permission to register.

**SAMPLE: Selected Elective Courses not requiring instructor permission:**

| 54-187 | Introduction to Playwriting | 9 |
|---|---|---|
| 54-190 | Advanced Playwriting | 9 |
| 54-191 | Acting for Non-Majors | 9 |
| 54-193 | Intro to Screenwriting | 9 |
| 54-196 | Advanced Screenwriting | 9 |

**SAMPLE: Selected Elective Courses requiring instructor permission:**

| 54-109 | Dramaturgy 1: Approaches to Text | 9 |
|---|---|---|
| 54-121 | Directing I: Sources | 9 |
| 54-157 | Production Science | 6 |
| 54-169 | Studiocraft 1 | 13 |
| 54-171 | Basic Design 1 | 6 |

Additional Drama Courses are available by instructor agreement and may require an audition, interview, or portfolio review. Students should contact the Drama Sr. Academic Advisor, Amy Nichols, to inquire about permission for specific courses in which they are interested.

**Minimum units required:** 55

# Minors under Music

## Minor in Music

This sequence is for candidates who are majors from any discipline in the university other than music who have some background in music and would like to know more about music.

**Admission Requirements:**

1. The student must apply to enter the program in the office of the Director of Student Services (CFA 108).

| **Prerequisite Course** | | **0–3 units** |
|---|---|---|

Beginning Piano for Minors is required of students who do not pass a beginning piano proficiency test.

| 57-294 | Beginning Piano Test | 0 |
|---|---|---|
| 57-329 | Beginning Piano for Minors | 3 |

| **Required Music Courses** | | **25 units** |
|---|---|---|

Basic Harmony I and/or Basic Solfege I are required of students who do not qualify for entrance into Harmony I and/or Solfege I, based on their scores on the theory and solfege placement tests. These classes fulfill the harmony and solfege requirements.

| 57-152 | Harmony I | 9 |
|---|---|---|
| 57-161 | Eurhythmics I | 3 |
| 57-181 | Solfege I | 3 |
| 57-173 | Survey of Western Music History | 9 |
| 57-188 | Repertoire and Listening for Musicians | 1 |

| **Required Studio Courses (studio fee is charged)** | | |
|---|---|---|
| | | **24 units** |
| 57-1xx | Elective Studio | 6 |
| 57-1xx | Elective Studio | 6 |
| 57-1xx | Elective Studio | 6 |
| 57-1xx | Elective Studio | 6 |

| **Elective Courses** | | **18 units** |
|---|---|---|

Elective courses are to be chosen from those courses listed for the School of Music in the current course catalog. Performance electives are encouraged. (An audition is required for all School of Music performance ensembles.)

**Minimum units required:** 67

# Minor in Music Technology

This sequence is for candidates who are majors from any discipline in the university who have some background in music and would like to know more about music technology.

Note: Students in the School of Music have slightly different requirements for the Minor in Music Technology. See School of Music (http://coursecatalog.web.cmu.edu/collegeoffinearts/schoolofmusic/#minorinmusictechnologyforstudentsintheschoolofmusic).

**Admission Requirements**

The student must apply to enter the program in the office of the Director of Student Services (CFA 108).

| **Prerequisite Course** | | **0–3 units** |
|---|---|---|

Beginning Piano for Minors is required of students who do not pass a beginning piano proficiency test.

| 57-294 | Beginning Piano Test | 0 |
|---|---|---|
| 57-329 | Beginning Piano for Minors | 3 |

| **Required Music Courses** | | **25 units** |
|---|---|---|

Basic Harmony I and/or Basic Solfege I are required of students who do not qualify for entrance into Harmony I and/or Solfege I, based on their scores on the theory and solfege placement tests. These classes fulfill the harmony and solfege requirements.

| 57-152 | Harmony I | 9 |
|---|---|---|
| 57-161 | Eurhythmics I | 3 |
| 57-173 | Survey of Western Music History | 9 |
| 57-181 | Solfege I | 3 |
| 57-188 | Repertoire and Listening for Musicians | 1 |

## 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 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 |
| 15-323 | Computer Music Systems and Information Processing | 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 |
| 54-505 | Ear Training | 1 |
| 54-666 | Production Audio | 6 |
| 57-344 | Experimental Sound Synthesis | 9 |
| 57-347 | Electronic and Computer Music | 6 |
| 57-478 | Survey of Historical Recording | 6 |
| 60-352 | NOISE: Toward a Critical Theory of Sound and Hearing | 9 |

**Minimum units required:** 67

# Minor in Music Theory

This sequence is for candidates who are majors from any discipline in the university who have some background in music and would like to know more about music theory.

Note: Students in the School of Music have slightly different requirements for the Minor in Music Theory. See School of Music (http://coursecatalog.web.cmu.edu/collegeoffinearts/schoolofmusic/#minorinmusictechnologyforstudentsintheschoolofmusic).

## Admission Requirements

The student must apply to enter the program in the office of the Director of Student Services (CFA 108).

## Prerequisite Course    0–3 units

Beginning Piano for Minors is required of students who do not pass a beginning piano proficiency test.

| 57-294 | Beginning Piano Test | 0 |
|---|---|---|
| 57-329 | Beginning Piano for Minors | 3 |

## Required Music Courses    25 units

Basic Harmony I and/or Basic Solfege I are required of students who do not qualify for entrance into Harmony I and/or Solfege I, based on their scores on the theory and solfege placement tests.  These classes fulfill the harmony and solfege requirements.

| 57-152 | Harmony I | 9 |
|---|---|---|
| 57-161 | Eurhythmics I | 3 |
| 57-173 | Survey of Western Music History | 9 |
| 57-181 | Solfege I | 3 |
| 57-188 | Repertoire and Listening for Musicians | 1 |

## Required Theory Courses    21 units

| 57-151 | Counterpoint in Theory and Application | 6 |
|---|---|---|
| 57-153 | Harmony II | 9 |
| 57-408 | Form and Analysis | 6 |

## Upper Level Theory Course (choose one)    6 units

See theory courses on the Music Support Courses Two-Year Rotation list.  It is available on the Inside Music website:http://music.cfa.cmu.edu/.  A graduate course may be taken with the permission of the instructor.

## Elective Courses    18 units

Elective courses are to be chosen from those courses listed for the School of Music in the current course catalog.

**Minimum units required:** 70

## Minor in Musicology

This sequence is for candidates who are majors from any discipline in the university who have some background in music and would like to know more about music history.

### Admission Requirements

The student must apply to enter the program in the office of the Director of Student Services (CFA 108).

### Prerequisite Course                                    0–3 units

Beginning Piano for Minors is required of students who do not pass a beginning piano proficiency test.

| | | |
|---|---|---|
| 57-294 | Beginning Piano Test | 0 |
| 57-329 | Beginning Piano for Minors | 3 |

### Required Music Courses                                 15 units

Basic Harmony I and/or Basic Solfege I are required of students who do not qualify for entrance into Harmony I and/or Solfege I, based on their scores on the theory and solfege placement tests.  These classes fulfill the harmony and solfege requirements.

| | | |
|---|---|---|
| 57-152 | Harmony I | 9 |
| 57-161 | Eurhythmics I | 3 |
| 57-181 | Solfege I | 3 |

### Required Musicology Courses                            36 units

| | | |
|---|---|---|
| 57-283 | Music History I | 9 |
| 57-284 | Music History II | 9 |
| 57-285 | Music History III | 9 |
| 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 |

### Upper Level Musicology Course (choose one)   6 units

See musicology courses on the Music Support Courses Two-Year Rotation list.  It is available on the Inside Music website:http://music.cfa.cmu.edu/.  A graduate course may be taken with the permission of the instructor.

### Elective Courses                                       18 units

Elective courses are to be chosen from those courses listed for the School of Music in the current course catalog.

**Minimum units required:** 75

## Minor in Sonic Arts – IDeATe

The minor in Sonic Arts is offered by the School of Music as part of the Integrative Design, Arts and Technology (IDeATe) network. IDeATe offers students the opportunity to become immersed in a collaborative community of faculty and peers who share expertise, experience, and passions at the intersection of arts and technology. Students will engage in active "learning by doing" in shared labs and maker spaces. The program addresses current and emerging real-world challenges that require disciplinary expertise coupled with multidisciplinary perspectives and collaborative integrative approaches.

The IDeATe undergraduate curriculum consists of eight areas, all of which can also be taken as minors. The themes of these areas integrate knowledge in technology and arts: Game Design, Animation & Special Effects, Media Design, Design for Learning, Sonic Arts, Innovation and Entrepreneurship, Intelligent Environments, and Physical Computing. For more information about the IDeATe network, please see Undergraduate Options (http://coursecatalog.web.cmu.edu/servicesandoptions/undergraduateoptions/#ideate).

In the Sonic Arts minor, students create experimental music or explore new, technology-enabled 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 |
| 60-210 | Electronic Media Studio: Introduction to Interactivity | 10 |
| 60-212 | Electronic Media Studio: Interactivity and Computation for Creative Practice | 12 |

One IDeATe Portal Course - Minimum of 9 Units

| | | Units |
|---|---|---|
| 16-223 | IDeATe Portal: Creative Kinetic Systems | 10 |
| 18-090 | Twisted Signals: Multimedia Processing for the Arts | 10 |
| 60-223 | IDeATe: Introduction to Physical Computing | 10 |
| 62-150 | IDeATe Portal: Introduction to Media Synthesis and Analysis | 10 |
| 99-361 | IDeATe Portal | 9 |

IDeATe Sonic Arts Courses - Minimum of 27 Units

| | | Units |
|---|---|---|
| 15-322 | Introduction to Computer Music | 9 |
| 15-323 | Computer Music Systems and Information Processing | 9 |
| 18-493 | Electroacoustics | 12 |
| 33-114 | Physics of Musical Sound | 9 |
| 54-166 | Introduction to Sound Design for Theatre | 6 |
| 54-267 | Conceptual Sound Design | 9 |
| 54-509 | Theatrical Sound System Design 2 | 9 |
| 57-337 | Sound Recording | 6 |
| 57-344 | Experimental Sound Synthesis | 9 |
| 57-347 | Electronic and Computer Music | 6 |
| 57-421 | The Exploded Ensemble | 6 |
| 57-425 | Expanded Music Performance | 9 |
| 60-352 | NOISE: Toward a Critical Theory of Sound and Hearing | 9 |
| 76-285 | Team Communication | 6 |

Double-Counting

Students may double-count up to two of their Sonic Arts minor courses toward requirements for other majors or minors.

# Minors under CFA Dean's Office

## Minor in the History of Arts

This minor of six or more courses as designated below, will offer students a grouping of Arts History courses that can provide a broad survey in the arts or a highly specialized field. For College of Fine Arts students, all courses meeting the requirements of the Minor in the History of the Arts must be taken outside of their major School, with the exception of the School of Architecture. Interested students should contact Svenja Drouven in the College of Fine Arts, Room 100.

### Introductory Level Courses                             27 units

(choose at least three, CFA students pick 3 outside of major)

| | | |
|---|---|---|
| 48-240 | Historical Survey of World Architecture and Urbanism I (pre-requisite for all advanced architecture classes below) | 9 |
| 51-271 | How People Work | 9 |
| 54-239 | History of Architecture and Decor 1: Ancients to Gothic | Var. |
| 54-245 | History of Clothing 1 | Var. |
| 54-246 | History of Clothing 2 | Var. |

| | | |
|---|---|---|
| 57-173 | Survey of Western Music History | 9 |
| 60-205 | Critical Theory in Art III | 9 |
| 60-206 | Critical Theory in Art IV | 9 |

| | | |
|---|---|---|
| 62-325 | View Camera | 10 |
| 62-326 | Photographic Narrative | 9 |
| 62-375 | Large Format Photography: The Antiquarian Avant-Garde | 10 |

## Advanced Courses                    27 units

(choose at least three, CFA students pick 3 outside of major)*

| | | |
|---|---|---|
| 48-340 | Modern Architecture and Theory 1900-1945 | 9 |
| 48-341 | Expression in Architecture | 9 |
| 48-348 | Architectural History of Mexico & Guatemala | 9 |
| 48-440 | American Regions & Regionalism: An Architectural History of Place, Time, and Cul | 9 |
| 51-272 | Cultures | 4.5 |
| 51-378 | Development of Form with Models & Sketches | 4.5 |
| 54-381 | Special Topics in Drama: History, Literature and Criticism | 6 |
| 57-209 | The Beatles | 9 |
| 57-477 | Music of the Spirit | 6 |
| 57-478 | Survey of Historical Recording | 6 |
| Art History/Theory Special Topics 60-350 to 60-398 (instructor permission only) | | 9 |
| 62-360 | Photographers and Photography Since World War II | 9 |
| 62-371/79-372 | Photography, The First 100 Years, 1839-1939 | 9 |
| 79-395 | The Arts in Pittsburgh | 9 |
| 79-396 | Music and Society in 19th and 20th Century Europe and the U.S. | 9 |

**Minimum units required:** 54

* Other courses not on this list may qualify as approved by CFA Dean's Office (College of Fine Arts, Room 100).

# Minor in Photography

The Photography Minor exposes students to the breadth of photography offering experiences in traditional photography (i.e. film exposure and silver printing) to digital shooting and output.  The student who takes the Photography Minor will become familiar with photography's craft, its history and significant practitioners, and develop his/her own distinct engagement with the medium.

Students may apply for the Photography Minor after they have taken a CFA or Pittsburgh Filmmakers' beginning photography course. Freshmen should not apply for the minor. Students in four-year undergraduate programs may apply in their sophomore or junior year. Students in five-year undergraduate programs, such as Architecture, may apply in their second, third, or fourth year. Applications are accepted in both the fall and spring semesters. Students will be admitted to the minor based on their aptitude, appropriate level of photography skills, and space availability within the program. Once admitted, students will be assigned a faculty advisor who will help them determine a sequence of courses that best fits their needs and interests.

## Application Requirements

The application process for the Photography Minor requires submission of: a completed application form signed by the home department advisor, a personal statement, and a portfolio of photographs.  Contact the CFA Photography Administrator, Jamie Gruzska, MM B18, for further information and an application form.

## Photography Required Courses (3) minimum 27 units

| | | |
|---|---|---|
| 62/60-141/51-285 | Black and White Photography I * ** | 10 |
| 62-241 | Black and White Photography II | 10 |
| 62-142 | Digital Photography I | 10 |

## Photography Elective (1)            minimum 9 units

Choose one (1) additional photography course from the list below in consultation with the photo advisor, or consult Jamie Gruzska for current offerings. Also, photo courses may be taken at Pittsburgh Filmmakers. Please refer to their course catalog that is available in the CFA Dean's Office, CFA 100, or online:  pghfilmmakers.org (http://www.pghfilmmakers.org)

| | | |
|---|---|---|
| 62-165 | Mutable Landscape: | 10 |
| 62-245 | Portrait Photography | 10 |
| 62-265 | Alternative Photo Processes | 10 |

## Photo History Required Course (1)                 9 units

| 62-371 | Photography, The First 100 Years, 1839-1939 [**] | 9 |
| | or 62-360   Photographers and Photography Since World War II | |

## History, Theory, or Criticism of the Visual Arts Elective (1)                 9 units

Choose one (1) additional History, Theory or Criticism of the Arts course in consultation with the photo advisor.  A second Photo History course (62-360 or 62-371) can be used for this requirement.

* prerequisite for photo courses other than history, theory, and/or criticism course

** or course approved by the photography advisor

**Minimum units required:** 54