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)

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: Valeria McCrary; Music: Sharon Johnston; IDeATe: Kelly Delaney.

Architecture Minors

For the most up-to-date list of architecture-related minors, see: https://soa.cmu.edu/minors (https://soa.cmu.edu/minors/).

Minor in Architecture

Available to non-architecture majors only (minimum 54 units total)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>79-104</td>
<td>9</td>
</tr>
</tbody>
</table>

Minimal requirements:

- Global Histories, or course 62-110 or 62-106

Required Courses 19-24 units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>48-100</td>
<td>12</td>
</tr>
<tr>
<td>or 48-095</td>
<td>9</td>
</tr>
<tr>
<td>48-240</td>
<td>9</td>
</tr>
</tbody>
</table>

Elective Courses* 26-31 units

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-125</td>
<td>6</td>
</tr>
<tr>
<td>62-126</td>
<td>6</td>
</tr>
<tr>
<td>62-122</td>
<td>6</td>
</tr>
<tr>
<td>62-123</td>
<td>6</td>
</tr>
<tr>
<td>48-215</td>
<td>9</td>
</tr>
<tr>
<td>48-324</td>
<td>3</td>
</tr>
<tr>
<td>48-380</td>
<td>6</td>
</tr>
<tr>
<td>48-381</td>
<td>6</td>
</tr>
<tr>
<td>48-383</td>
<td>6</td>
</tr>
<tr>
<td>48-xxx</td>
<td>9</td>
</tr>
</tbody>
</table>

Minimum Units: 54

*Students should consult the Architecture advisor regarding elective choices.

Minor in Architecture History

Available to both architecture majors (63 total units total) and non-architecture majors (54 total units total)

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>48-240</td>
<td>9</td>
</tr>
<tr>
<td>48-241</td>
<td>9</td>
</tr>
</tbody>
</table>

Selective Courses 36 units/45 units

Students should consult the Architecture advisor regarding elective choices.

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

Minor in Architectural Representation and Visualization

Available to both architecture majors (63 total units total) and non-architecture majors (54 total units total)

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 (M.S.C.D.). 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-122</td>
<td>6</td>
</tr>
<tr>
<td>62-123</td>
<td>6</td>
</tr>
</tbody>
</table>
Minors Offered by the College of Fine Arts

Minor in Architectural Technology

Available to non-architecture majors only (minimum 54 units total)

This sequence is for candidates who intend to develop intellectual links to the technical aspects of the profession.

**Prerequisite Courses**

- 33-141 Physics for Engineering Students
- 21-120 Differential and Integral Calculus

**Selective Courses**

- 48-116 Introduction to Building Performance
- 48-215 Materials & Assembly
- 48-324 Structures/Statics
- 48-315 Environment I: Climate & Energy in Architecture
- 48-432 Environment II: Design Integration of Active Building Systems
- 48-752 Zero Energy Housing
- 48-xxx Architectural Technology Elective (pre-approval required)

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

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

Minor in Building Science

Available to architecture majors only (minimum 54 units total)

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 (MSBPD) and Sustainable Design (MSSD). 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.

**Required Course**

- 48-722 Building Performance Modeling

**Selective Courses**

- 48-795 LEED
- 48-721 Building Controls and Diagnostics
- 48-723 Performance of Advanced Building Systems
- 48-729 Sustainability, Health and Productivity to Accelerate a Quality Built Environment
- 48-749 Special Topics in Computational Design
- 48-752 Zero Energy Housing

**Minimum Units:** 54.

Minor in Architectural Design Fabrication

Available to architecture majors only (minimum 63 units total)

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.

**Required Courses**

- 48-531 Fabricating Customization: Prototype
- 48-545 Design Fabrication
- 48-555 Introduction to Architectural Robotics
- 48-xxx ASO Studio with digital fabrication focus

**Selective Courses**

- 48-470 The Depth of Surface
- 48-473 Hand and Machine Joinery, New Directions
- 48-xxx Design Fabrication Independent Study

**Minimum Units:** 63.

Minor in Computational Design

Available to both architecture majors and non-architecture majors (minimum 54 units total)

The minor in Computational Design is intended for students who wish to engage with computation as a vehicle of generative, material, and spatial design exploration. It brings together courses from the School of Architecture and the College of Fine Arts to offer students hands-on experience, and a deep understanding, of computation as a resource in creative design practices. Students minoring in computational design will be eligible for advanced standing in the School of Architecture’s Master of Science in Computational Design (MSCD) program. The minor offers students the possibility of exploring three areas of computational design: designing, making, and theory. Please refer to this document ([https://static1.squarespace.com/static/54c2a5c7e4b043776a0b0036/t/5f4eb94ce17d4e73ccbbd371/1598994764926/cd_minor_20200829.pdf](https://static1.squarespace.com/static/54c2a5c7e4b043776a0b0036/t/5f4eb94ce17d4e73ccbbd371/1598994764926/cd_minor_20200829.pdf)) for the latest information.

**Required Courses**

- 62-122 Digital Media I
- 62-123 Digital Media II
- 62-225 Generative Modeling
- 62-275 Fundamentals of Computational Design

**Selective Courses**

- 48-568 Advanced CAD, BIM, and 3D Visualization
- 51-367 Design Center: Computational Design Thinking

**Minimum Units:** 54.
Art Minor

The Art minor allows undergraduate students outside of the School of Art to pursue a largely studio-based minor in addition to their primary degree. Students can narrowly focus their interest or explore a number of mediums.

To declare an Art minor, students should contact Keni Jefferson (kjefferson@cmu.edu), in the College of Fine Arts, room 300. A portfolio is not required.

**FOUNDATION MEDIA STUDIOS (CHOOSE TWO) 20 UNITS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-110</td>
<td>Foundations: Time-Based Media</td>
<td>10</td>
</tr>
<tr>
<td>60-120</td>
<td>Foundations: Digital Media</td>
<td>10</td>
</tr>
<tr>
<td>60-131</td>
<td>Foundations: Sculpture</td>
<td>10</td>
</tr>
<tr>
<td>60-135</td>
<td>Foundations: Sculpture II</td>
<td>10</td>
</tr>
<tr>
<td>60-137</td>
<td>Ceramics for Non-Majors</td>
<td>10</td>
</tr>
<tr>
<td>60-150</td>
<td>Foundations: Drawing</td>
<td>10</td>
</tr>
<tr>
<td>60-157</td>
<td>Drawing for Non-Majors</td>
<td>10</td>
</tr>
<tr>
<td>60-170</td>
<td>Foundations: Paint/Print</td>
<td>10</td>
</tr>
</tbody>
</table>

**INTERMEDIATE/ADVANCED MEDIA STUDIO ELECTIVES (CHOOSE THREE) 30 UNITS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-2xx</td>
<td>Intermediate Studio Electives</td>
<td>10</td>
</tr>
<tr>
<td>60-4xx</td>
<td>Advanced ETB: Electives</td>
<td>10</td>
</tr>
<tr>
<td>60-4xx</td>
<td>Advanced SIS: Electives</td>
<td>10</td>
</tr>
<tr>
<td>60-4xx</td>
<td>Advanced DP3: Electives</td>
<td>10</td>
</tr>
<tr>
<td>60-4xx</td>
<td>Advanced CP: Electives</td>
<td>10</td>
</tr>
</tbody>
</table>

**Critical Studies (choose one) 9 units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-105</td>
<td>Cultural History of the Visual Arts</td>
<td>9</td>
</tr>
<tr>
<td>60-3xx</td>
<td>Critical Theory Elective</td>
<td>9</td>
</tr>
</tbody>
</table>

Minimum units: 59

Media Design Minor - IDeATe

The minor in Media Design is offered by the School of Art as part of the Integrative Design, Arts and Technology (http://coursecatalog.web.cmu.edu/schools-colleges/collegeoffinearts/collegeoffineartsminors/ideate.cmu.edu) (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 ten 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, Physical Computing, Soft Technologies, and Immersive Technologies in Arts & Culture. For more information about the IDeATe network, please see Undergraduate Options (http://coursecatalog.web.cmu.edu/aboutcmu/undergraduatedepartment/ideate).)

The IDeATe Media Design minor invites students on a wide-ranging exploration of the digital media landscape. This multifaceted program encourages a holistic engagement with media technologies and practices, offering an opportunity to embrace the full breadth of media arts disciplines within the IDeATe network. Students gain the skills to design experiences across various platforms, from mobile devices to performances and large-scale installations, while gaining an understanding of how technology and content relate in new media systems, and how meanings are made in these evolving forms.

The flexibility inherent in the Media Design minor allows students to create a learning pathway that mirrors their unique interests, integrating elements from the other IDeATe minors. This approach makes it an ideal option for students who wish to experience the broad tapestry of digital media arts or those yet to pinpoint their exact focus within this dynamic field. The Media Design minor therefore cultivates versatile media practitioners, ready to innovate within the diverse and rapidly evolving digital media arena.
Design Minor

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.

Double-Counting

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

Design Minor

**Curriculum**

One Computing Course - Minimum of 9 Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-104</td>
<td>Introduction to Computing for Creative Practice</td>
<td>10</td>
</tr>
<tr>
<td>15-110</td>
<td>Principles of Computing</td>
<td>10</td>
</tr>
<tr>
<td>15-112</td>
<td>Fundamentals of Programming and Computer Science</td>
<td>12</td>
</tr>
<tr>
<td>60-212</td>
<td>Intermediate Studio: Creative Coding</td>
<td>12</td>
</tr>
</tbody>
</table>

One IDeATe Portal Course - Minimum of 9 Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>62-150</td>
<td>IDeATe Portal: Introduction to Media Synthesis and Analysis</td>
<td>10</td>
</tr>
<tr>
<td>16-223</td>
<td>IDeATe Portal: Creative Kinetic Systems</td>
<td>10</td>
</tr>
<tr>
<td>18-090</td>
<td>Twisted Signals: Multimedia Processing for the Arts</td>
<td>10</td>
</tr>
<tr>
<td>53-322</td>
<td>IDeATe: Little Games/Big Stories: Indie Roleplaying Game Studio</td>
<td>9</td>
</tr>
<tr>
<td>60-125</td>
<td>IDeATe: Introduction to 3D Animation Pipeline</td>
<td>12</td>
</tr>
<tr>
<td>60-223</td>
<td>IDeATe Portal: Introduction to Physical Computing</td>
<td>10</td>
</tr>
<tr>
<td>82-250</td>
<td>Digital Realities: Introducing Immersive Technologies for Arts and Culture</td>
<td>9</td>
</tr>
<tr>
<td>99-361</td>
<td>IDeATe Portal</td>
<td>9</td>
</tr>
</tbody>
</table>

IDeATe Media Design Courses - Minimum of 27 Units

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>05/18-540</td>
<td>Rapid Prototyping of Computer Systems</td>
<td>12</td>
</tr>
<tr>
<td>15-294</td>
<td>Special Topic: Rapid Prototyping Technologies</td>
<td>5</td>
</tr>
<tr>
<td>15-394</td>
<td>Intermediate Rapid Prototyping</td>
<td>5</td>
</tr>
<tr>
<td>16/54-375</td>
<td>IDeATe: Robotics for Creative Practice</td>
<td>10</td>
</tr>
<tr>
<td>24-672</td>
<td>Special Topics in DIY Design and Fabrication</td>
<td>12</td>
</tr>
<tr>
<td>51-236</td>
<td>Information Design</td>
<td>9</td>
</tr>
<tr>
<td>51-400</td>
<td>Transition Design</td>
<td>9</td>
</tr>
<tr>
<td>53-250</td>
<td>Immersive Experience Pre-production Process</td>
<td>9</td>
</tr>
<tr>
<td>53-312</td>
<td>Guest Experience in Theme Park Design</td>
<td>9</td>
</tr>
<tr>
<td>53-376</td>
<td>360 Story and Sound</td>
<td>12</td>
</tr>
<tr>
<td>53-558</td>
<td>Reality Computing Studio</td>
<td>12</td>
</tr>
<tr>
<td>54-399</td>
<td>Decoding Media</td>
<td>9</td>
</tr>
<tr>
<td>60-110</td>
<td>Foundations: Time-Based Media</td>
<td>10</td>
</tr>
<tr>
<td>60-428</td>
<td>Advanced ETB: Drawing with Machines</td>
<td>12</td>
</tr>
<tr>
<td>60-461</td>
<td>Advanced ETB: Experimental Capture</td>
<td>12</td>
</tr>
<tr>
<td>62-362</td>
<td>IDeATe: Electronic Logics &amp; Creative Practice</td>
<td>12</td>
</tr>
<tr>
<td>62-478</td>
<td>IDeATe: digiTOL</td>
<td>9</td>
</tr>
<tr>
<td>67-240</td>
<td>Mobile Web Design Development</td>
<td>9</td>
</tr>
<tr>
<td>67-265</td>
<td>Design Fundamentals: Shaping Interactions and Experiences</td>
<td>9</td>
</tr>
<tr>
<td>67-338</td>
<td>Information &amp; Grid Design</td>
<td>9</td>
</tr>
<tr>
<td>76-374</td>
<td>Mediated Narrative</td>
<td>9</td>
</tr>
<tr>
<td>82-285</td>
<td>Podcasting: Language and Culture Through Storytelling</td>
<td>9</td>
</tr>
</tbody>
</table>

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

**Requirements and Electives**

For a design minor, students must complete 54 units: 27 units of required courses, plus 27 units of design electives.

**Required Design Courses**

Three required courses:

- 51-262 Design Center: CD Fundamentals: Design for Interactions for Communications (formerly CDF) 9 units
- 51-261 Design Center: Communication & Digital Design Fundamentals 9 units

**IDeATe Courses**

- 51-xxx Design Elective 9 units
- 51-xxx Design Elective 9 units
- 51-xxx Design Elective 9 units

**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 (http://www.design.cmu.edu), or paper applications are available at the School of Design office, MMCH 110.

**Drama Minor**

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 Academic Advisor.
2. The student must successfully pass one Drama course prior to being considered for minor status.

**Required Courses**

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

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

**Elective Courses**

- Additional course options as available. Please refer to the Drama minor, toward requirements for other majors or minors.

**Additional Course Options**

- 54-187 Writing the Adaptation for Stage and Screen 9 units
- 54-199 Creating the Choreopoem 9 units
- 54-191 Acting for Non-Majors 9 units
- 54-193 Acting for Non-Majors: Improv 9 units
- 54-196 Harvesting Personal Narratives: A Writing Workshop 9 units

**Admission**

Admission is open to any student who is a regular matriculant at CMU, has applied for the minor, and has demonstrated an aptitude for design through a portfolio and written statement. Admission is independent of the major and does not affect eligibility for financial aid.

The remainder of the minor is fulfilled with Drama courses of the student’s choosing, with approval from the Drama Academic Advisor. For certain courses, students may need instructor permission to register.

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

- 54-187 Writing the Adaptation for Stage and Screen 9 units
- 54-190 Creating the Choreopoem 9 units
- 54-191 Acting for Non-Majors 9 units
- 54-193 Acting for Non-Majors: Improv 9 units
- 54-196 Harvesting Personal Narratives: A Writing Workshop 9 units
SAMPLE: Selected Elective Courses requiring instructor permission:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>54-109</td>
<td>Dramaturgy I: Approaches to Text</td>
<td>9</td>
</tr>
<tr>
<td>54-121</td>
<td>Directing I: A Director's Mindset</td>
<td>9</td>
</tr>
<tr>
<td>54-157</td>
<td>Production Science</td>
<td>6</td>
</tr>
<tr>
<td>54-169</td>
<td>Studiocraft I</td>
<td>13</td>
</tr>
<tr>
<td>54-171</td>
<td>Basic Design I</td>
<td>6</td>
</tr>
</tbody>
</table>

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

Minimum units required: 55

Music Minors

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 online to enter the program by submitting the minor application that is available here (https://www.cmu.edu/cfa/music/current-students/guidelines-forms/music-minor.html) on the Current Students website.

Prerequisite Course

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

- 57-294 Beginning Piano Test: 0 units
- 57-329 Beginning Piano for Minors: 3 units

Required Music Courses

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 units
- 57-161 Eurhythms I: 3 units
- 57-181 Solfege I: 3 units
- 57-173 Survey of Western Music History: 9 units
- 57-188 Repertoire and Listening for Musicians: 1 unit

Required Studio Courses (studio fee is charged)

24 units

- 57-1xx Elective Studio: 6 units
- 57-3xx Elective Studio: 6 units

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 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 technology.

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/schools-colleges/collegoffinearts/schoolofmusic/#minorinmusictechnologyforstudentsintheschoolofmusic).

Admission Requirements

1. The student must apply online to enter the program by submitting the minor application that is available here (https://www.cmu.edu/cfa/music/current-students/guidelines-forms/music-minor.html) on the Current Students website.

Prerequisite Course

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

- 57-294 Beginning Piano Test: 0 units
- 57-329 Beginning Piano for Minors: 3 units

Required Music Courses

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 units
- 57-161 Eurhythms I: 3 units
- 57-173 Survey of Western Music History: 9 units
- 57-181 Solfege I: 3 units
- 57-188 Repertoire and Listening for Musicians: 1 unit

Sound Recording Courses

21 units

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

Music Technology/Sound Courses (choose at least three)

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 units
- 15-322 Introduction to Computer Music: 9 units
- 18-090 Twisted Signals: Multimedia Processing for the Arts: 10 units
- 33-114 Physics of Musical Sound: 9 units
- 54-166 Introduction to Sound Design for Theatre: 6 units
- 57-344 Experimental Sound Synthesis: 9 units
- 57-347 Electronic and Computer Music: 6 units
- 57-478 Survey of Historical Recording: 6 units
- 57-421 Exploded Ensemble: 6 units

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/schools-colleges/collegoffinearts/schoolofmusic/#minorinmusictechnologyforstudentsintheschoolofmusic).
### 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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-104</td>
<td>Introduction to Computing for Creative Practice</td>
<td>10</td>
</tr>
<tr>
<td>15-110</td>
<td>Principles of Computing</td>
<td>10</td>
</tr>
<tr>
<td>15-112</td>
<td>Fundamentals of Programming and Computer Science</td>
<td>12</td>
</tr>
</tbody>
</table>

**One IDeATe Portal Course - Minimum of 9 Units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-090</td>
<td>Twisted Signals: Multimedia Processing for the Arts</td>
<td>10</td>
</tr>
</tbody>
</table>

**IDeATe Sonic Arts Courses - Minimum of 27 Units**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-322</td>
<td>Introduction to Computer Music</td>
<td>9</td>
</tr>
<tr>
<td>33-114</td>
<td>Physics of Musical Sound</td>
<td>9</td>
</tr>
<tr>
<td>54-166</td>
<td>Introduction to Sound Design for Theatre</td>
<td>6</td>
</tr>
<tr>
<td>54-267</td>
<td>Conceptual Sound Design</td>
<td>9</td>
</tr>
<tr>
<td>54-509</td>
<td>Theatrical Sound System Design 2</td>
<td>9</td>
</tr>
<tr>
<td>57-337</td>
<td>Sound Recording</td>
<td>6</td>
</tr>
<tr>
<td>57-344/60-407</td>
<td>Experimental Sound Synthesis</td>
<td>9</td>
</tr>
<tr>
<td>57-347</td>
<td>Electronic and Computer Music</td>
<td>6</td>
</tr>
<tr>
<td>57-358</td>
<td>Introduction to Electronic Music portfolio required for registration</td>
<td>9</td>
</tr>
<tr>
<td>57-359</td>
<td>Audiovisual Composition</td>
<td>9</td>
</tr>
<tr>
<td>57-421</td>
<td>Exploded Ensemble</td>
<td>6</td>
</tr>
<tr>
<td>57-458</td>
<td>Business of Music</td>
<td>6</td>
</tr>
</tbody>
</table>

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.

### CFA Dean's Office Minors

#### Minor in the History of Arts

This minor of six or more courses as designated below, offers students flexibility to engage in a broad survey in the arts or can be tailored to reflect a more specific area of interest. 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 Dan Barrett (dbarrett@andrew.cmu.edu) in the College of Fine Arts, Room 100.

**Introductory Level Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>48-240</td>
<td>History of World Architecture, I</td>
<td>9</td>
</tr>
<tr>
<td>48-241</td>
<td>History of Modern Architecture</td>
<td>9</td>
</tr>
</tbody>
</table>
Minors Offered by the College of Fine Arts

54-239 History of Architecture and Decor 1: Ancients to Gothic Var.
54-245 Who Wore What: When, Where, and Why (instructor permission only) Var.
54-246 Who Wore What: When, Where, Why II (instructor permission only) Var.
57-173 Survey of Western Music History (coreq: 57-188) 9
57-188 Repertoire and Listening for Musicians (coreq of 57-173) 1
60-105 Cultural History of the Visual Arts (instructor permission only) 9
60-106 Critical Theory in Art II 9

Intermediate/Advanced Level Courses 27 units
(choose at least three, CFA students pick 3 outside of major)*
48-348 Architectural History of Mexico & Guatemala 9
48-374 History of Architecture in the Islamic World- A Primer (prereq: 48-240) 9
48-440 American Regions & Regionalism: An Architectural History of Place, Time, and Cul (prereq: 48-240) 9
51-376 Semantics & Aesthetics 4.5
57-209 The Beatles 9
57-476 How Music Works: An Affective History 6
57-477 Music of the Spirit 6
57-478 Survey of Historical Recording 6
57-480 History of Black American Music 6
57-485 History of the Symphony 9
Art Critical Studies Electives: 60-352 to 60-398 (instructor permission only) 9
62-360/79-328 Photographers and Photography Since World War II 9
62-371/79-316 Photography, The First 100 Years, 1839-1939 9
79-395 The Arts in Pittsburgh 9

Minimum units required for minor: 54

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

Photography Elective (1) minimum 10 units
Choose one (1) or more additional photography courses from the list below in consultation with the photo advisor; consult Jamie Gruzska for current offerings.
62-208 Alternative Photography: Contemporary Antiquarian Printmaking 5
62-214 Photography and the Narrative of Place 5
62-235 Photographing America 10
62-245 Portrait Photography 10
62-375 Large Format Photography: The Antiquarian Avant-Garde 10
62-471 Photography/ Print Workshop 10
62-479 Photography: Picturing Identity 10

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

Students may apply for the Photography Minor after they have taken a beginning photography course. 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 (gruzska@andrew.cmu.edu), MM B18, for further information and an application form. Applications are processed every semester.

Photography Required Courses (3) minimum 30 units
62/60-141 Black and White Photography I 10
62/60-142 Digital Photography I 10
62/60-241 Black and White Photography II 10
Photo History Required Course (1)  minimum 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)  minimum 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.

*or course approved by the photography advisor

Minimum units required for minor: 58