School of Design

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Design at Carnegie Mellon

Design is the thoughtful activity that humanizes our environment through visual communication and the shaping of products that help us in our everyday lives. Whether in magazines and books, posters and exhibitions, video and film, human-computer interactions, or any of the myriad of everyday products such as furniture, consumer goods, vehicles, or medical equipment, designers play an important role in shaping the form and content of our experience.

Designers are concerned with aesthetics, but they are equally concerned with serving people. This requires more than skill in the fine arts. It also requires knowledge about the needs, desires, expectations, and capabilities of human beings. It requires skills of observation and interpretation that help us understand the people that we want to serve. More than this, however, designers must also understand the technological issues that stand behind effective products. They must understand the materials, tools, and production processes of the modern world. An education in design is an education for the mind as well as the eye and hand.

The emphasis in the School of Design is on professional preparation for an increasingly complex world in which design is an integrative discipline that supports the quality of human interaction in daily life. Designers must be able to integrate aspects of aesthetics and form giving, the social and behavioral sciences, natural sciences, and engineering. In addition, designers must be able to work effectively in teams of experts with specialized knowledge drawn from many disciplines. Therefore, the vision of design operating behind the School of Design contrasts sharply with visions that seek to reduce design to a fine art, a branch of engineering, or an area of the social sciences. The central theme of the School is communication and human experience. This reflects a new humanistic vision of design in the contemporary world, where a premium is placed on the designer's ability to invent, judge, make decisions, and evaluate for the purpose of improving the quality of life. For the design school at Carnegie Mellon, design is a new liberal art of technological culture.

The School offers two majors in design, with corresponding design minors programs.

B.F.A. in Communication Design

The goal of the Communication Design program is to prepare students with an understanding and mastery of the principles, theories, and skills of communication design. We define communication design as the effective presentation of ideas and information by means of type and image, whether in the traditional medium of print or the new digital medium that supports interactive computer display, multimedia communication technology, and information systems. What is common to the range of experiences in the program is a problem-solving approach to effective and expressive communication, with a special concern for the human being who will be touched by the communication artifact. We emphasize a design practice that is informed with an understanding of the social and cultural dimensions of communication, along with an appreciation of the power of words, images, sound, and movement. This is a forward looking program. While we foster a respect for the rich history of book, letter-form, and print design, we are also fascinated with the potential that technology and new theories of human-machine interaction hold for the design of future modes of communication.

B.F.A. in Industrial Design

The goal of the Industrial Design program is to equip designers for a world that places a high value on the quality of human interactions. We need products, devices, and designs that support and enhance these exchanges. To this end, we emphasize a design process strongly flavored by user testing, observation, and modeling, while preserving the richness of the visual and formal traditions in the field. The program approaches a balance by speaking clearly to several issues in the design process: how we respond to those qualities and needs, how we make creative applications of appropriate technologies, how we gain a perspective on the place of design in the economic and social life that is characteristic of contemporary culture, and how we expand our awareness of the place of design in history and in shaping the future.

Design Minors Program

The School also offers a minor in Communication Design and a minor in Industrial Design for well-qualified students. Further information on minors programs is provided earlier in the catalog.

The Design Curriculum

The design curriculum is for students who are interested in a full-time undergraduate study leading to entry-level professional employment or advanced graduate study in the areas of Communication Design or Industrial Design. The first year is a period of discovery, where students in both majors explore studio projects and supporting courses in the ideas and methods of design practice as well as courses in design studies. The second and third years are a period of concentration and development primarily within the student's major. The fourth year is a period of integration and advanced study, with studio projects involving teams of students from both majors as well as students from related fields. There are studio courses throughout all four years, supported by departmental electives in the ideas and methods of design practice and other courses in the history, theory, and criticism of design. In addition, the School also requires all students to take a substantial number of general education courses offered by other departments throughout the university. General education is an essential part of the education of a professional designer.

The First-Year Experience: Discovery

The first-year program in design provides a broad base for later specialization. Students are introduced to the three main tracks of the department: studio experience, ideas and methods of design practice, and design studies in history, theory, and criticism. Students are exposed to fundamental design processes, techniques, and ideational methods. They learn new ways of seeing and understanding familiar objects, of drawing and visualizing ideas and concepts, and how to use all of the resources of design to give form to ideas. Faculty members review each student's progress at the end of every semester. Faculty members also counsel students regarding both personal interests and educational objectives, so that a wise choice may be made between majoring in communication design or industrial design. In addition, students also take courses outside of the School for a sound general education.

This is the first-year curriculum for all design students.

First Year

Fall
Studio
51-101 Design Studio I
51-103 Design Workshop
Units
9
3
12
Ideas and Methods
51-121 Design Drawing I
Units
9
Design Studies
51-171 Human Experience in Design
Units
9
General Education
76-101 Interpretation and Argument
85-102 Introduction to Psychology
99-101 Computing @ Carnegie Mellon
or 99-102 Computing @ Carnegie Mellon
Units
9
3
21
Spring
Studio
51-102 Design Studio II
51-104 Design Workshop II
Units
9
3
12
School of Design

Ideas and Methods

Units
51-122 Design Drawing II 9
51-132 Introduction to Photo Design 4.5
1st mini
51-134 Photo Design II 4.5
2nd mini
18

Design Studies

Units
51-172 Design Thinking 9

General Education

Units
79-104 Global Histories 9

The Second- and Third-Year Experience: Concentration and Development

Following the first-year program, students enter one of the professional design majors: communication design or industrial design. Each option is built around six semesters of required and elective courses, covering the sophomore, junior, and senior years. The courses pose increasingly complex design problems similar to those faced by professional designers. They require students to use all of their creative, technical, and theoretical skills. In addition to studios, each option also requires a series of ideas and methods courses and a series of design studies courses covering design history, theory, and criticism as well as issues of professional practice. Students are also required to take general education courses to gain a broad vision of many disciplines and fields of knowledge that are relevant to design.

Communication Design

This is the second and third-year curriculum for students in communication design, with required courses noted in bold type and other available courses (often open to students of industrial design as well as communication design) noted in regular type. While required courses must be taken in proper sequence, other available courses may be taken later, when the student’s schedule permits. Please see the course descriptions section for a complete listing of design courses.

Second Year

Fall
Studio
51-201 CD Studio I: Communicating with Type 9

Ideas and Methods

Units
51-203 Communication Design Computer Lab 3
51-241 How People Work 9
51-229 Digital Photographic Imaging 9
21

Design Studies

Units
51-271 Design History I 9

General Education

Units
xx-xxx Academic Elective 9

Spring
Studio
51-202 CD Studio II: Organizing Information 9

Ideas and Methods

Units
51-222 Decoding Place 9
51-224 CD: Web Design 9

18

General Education

Units
xx-xxx Academic Elective 9
xx-xxx Free Elective 9
18

Third Year

Fall
Studio
51-301 CD III: Voice of Type 9

Ideas and Methods (select 2)

Units
51-321 Photographic Narrative 9
51-231 Calligraphy I 9
51-257 Computing for the Arts with Processing 9
51-347 Drawing from Nature 9
51-349 Visual Notation/Journaling 9
51-355 Experimental Sketching 4.5
51-399 Junior Independent Study Var.

General Education

Units
xx-xxx Academic Elective 9
xx-xxx Free Elective 9

18

Spring
Studio
51-302 CD Studio IV: Designing with Systems 9

Ideas and Methods (select one)

Units
51-324 Basic Prototyping (for Communication Design) 4.5
51-330 Photo Book Design 9
51-350 Visualization 9
51-328 Advanced Web Design 9
51-335 Mapping and Diagraming 9
51-380 Experiential Media 9
51-374 Understanding Perception through Design 9
51-376 Topics: Semantics & Aesthetics 9
51-384 Revealing Place 4.5
51-388 Sharing Economies 9
51-396 Design Ethos & Action 9
51-392 Images and Communication 4.5

Design Topics (select one)

Units
51-374 Understanding Perception through Design 9
51-376 Topics: Semantics & Aesthetics 9
51-384 Revealing Place 4.5
51-388 Sharing Economies 9
51-396 Design Ethos & Action 9
51-392 Images and Communication 4.5

General Education

Units
xx-xxx Academic Elective 9
xx-xxx Free Elective 18

27

Industrial Design

This is the second and third-year curriculum for students in industrial design, with required courses noted in bold type and other available courses (usually open to students of communication design as well as industrial design) noted in regular type. While required courses must be taken in proper sequence, other available courses may be taken later, when the student’s schedule permits. Please see the course descriptions section for a complete listing of design courses.

Second Year

Fall
Studio
51-211 Generation of Form: Industrial Design I 9

6
The Fourth-Year Experience: Integration and Advanced Study

In the senior year, the studio experience is primarily about team projects. The fall semester features the Senior Lab, focusing on the design problem-solving process and rapid prototyping. In the spring the projects typically involve cooperation with an external sponsor or client, with a combination of communication designers and industrial designers working in teams. The client agrees to participate as an information source, consultant, and project critic. All members of the team typically work on different aspects of a complex problem which is defined in conjunction with the client. Individual initiative and self-pacing are essential, but frequent group discussions and client reviews keep each student accountable to the team.

This is the fourth-year curriculum for all students, with required courses noted in bold type and other available courses (usually open to students of both communication design and industrial design) noted in regular type. Each senior signs up for one senior project in each semester.

Fourth Year

Fall

Studio

- 51-401 Senior Design Lab
  Units: 12

Ideas and Methods

- 51-421 Basic Interaction Design
  Units: 9

- 51-423 Pieces 2.0: Social Innovation: Desis Lab
  Units: 9

- 51-433 Advanced Interaction
  Units: 9

- 51-451 Fundamentals of Joinery & Furniture Design
  (I)
  Units: 9

- 51-441 Foundation of BME Design
  Units: 3

- 51-431 Revealing Place
  Units: 9

General Education

- xx-xxx Academic Elective
  Units: 9

- xx-xxx Free Elective
  Units: 9

Spring (Choose one project.)

Studio

- 51-404 Senior Project I
  Units: 12

- 51-406 Senior Project III
  Units: 12

- 51-408 Design Fictions & Imaginary Futures
  Units: 9

Ideas and Methods

- 51-426 Beginning Book Arts Lab
  Units: 6

- 51-452 Furniture Design II
  (I)
  Units: 9

- 51-428 Time, Motion and Communication
  Units: 9

- 51-478 Design Fictions & Imaginary Futures
  Units: 9

- 51-434 Experimental Form
  Units: 9

- 51-472 Globalization and Design
  Units: 4.5

Total Units: 46.5

General Education

- xx-xxx Academic Elective
  Units: 9

- xx-xxx Free Elective
  Units: 18

Total Units: 27
Other Requirements

General education courses should be selected from other departments throughout the university. Students are strongly advised to select a balanced set of general education electives in addition to Interpretation and Argument, World History and Introduction to Intelligence—from three broad areas of study: arts and humanities, social and behavioral sciences, and natural sciences and engineering, including mathematics. While free electives may include studio courses in other departments, academic electives are non-studio (lecture) courses in other departments. Specific recommendations (and general requirements) for electives in all of these areas are available from advisors in the School of Design. The School places strong emphasis on the value of general education for personal growth as well as professional development. General education electives allow a student to obtain a minor in another department or program, such as business, engineering, professional and technical writing, or architecture.

Students may enroll for no more than 18 units of independent study courses, and no more than one independent study per semester. A minimum 3.0 GPA is required for independent study. Independent study is permitted only in the third and fourth years of the program. Proposals for independent study courses must be developed jointly by the student and a faculty advisor. Guidelines are available from the School.

A minimum GPA of 2.0 is required to maintain Professional Program status. Grades lower than "C" in required Design courses will result in academic probation, suspension, or drop from the School of Design.

Full-time students are required to enroll for a minimum of 36 units per semester, with 45 units required for expected degree progress (typically five courses per semester). The minimum number of units required for graduation in Design is 360.

Standards

The design curriculum adheres closely to the fundamental professional entry-level standards established by the two leading national design organizations: the American Institute of Graphic Arts (AIGA) and the Industrial Designers Society of America (IDSA).

Applications

The School of Design accepts applications from students who are completing secondary education or who wish to transfer from within Carnegie Mellon University. The School also accepts applications from students who wish to transfer from other institutions. Students applying for the program are asked to either 1) submit a portfolio or 2) complete a design project (available as a PDF on the Design web site) as evidence of design ability. This is considered in balance with evidence of academic ability, based on secondary school grades, SAT scores, class rank, and letters of recommendation. The School also accepts applications for the design minors program for a limited number of spaces. Details are available from the design office.

Faculty

ERIC ANDERSON, Associate Professor of Design – M.A., Ohio State University; Carnegie Mellon, 1996–.

MARK BASKINGER, Associate Professor of Design – M.F.A., University of Illinois; Carnegie Mellon, 2003–.


CHARLEE MAE BRODSKY, Professor of Photography – M.F.A., Yale University; Carnegie Mellon, 1978–.

WAYNE CHUNG, Associate Professor of Design – M.F.A., University of the Arts; Carnegie Mellon, 2007–.


JONATHAN CAGAN, George Tallman Ladd Professor of Mechanical Engineering – Ph.D., University of California Berkeley; Carnegie Mellon, 2005–.

GOLAN LEVIN, Associate Professor of Art – M.S., Massachusetts Institute of Technology; Carnegie Mellon, 2002–.

LUIJS VON AHN, Assistant Professor of Computer Science – Ph.D, Carnegie Mellon University; Carnegie Mellon, 2005–.

SUGURU ISHIZAKI, Associate Professor of Rhetoric and Visual Design – Ph.D., Massachusetts Institute of Technology; Carnegie Mellon, 2005–.

DAVID S. KAUFER, Professor of English and Rhetoric – Ph.D., University of Wisconsin; Carnegie Mellon, 1980–.

AISLING KELLIHER, Associate Professor – M.S. & Ph.D, MIT; Carnegie Mellon, 2012–.


STACIE ROHRBACH, Associate Professor of Design – MGD, North Carolina State University; Carnegie Mellon, 2003–.

PETER SCIPELLE, Assistant Professor – MDes & Ph.D, Carnegie Mellon; Carnegie Mellon, 2011–.

STEPHEN J. STADELMIEER, Associate Professor of Design – M.S., Cornell University; Carnegie Mellon, 1977–.

CAMERON TONKINWISE, Associate Professor – Ph.D, University of Sydney; Carnegie Mellon, 2012–.

DYLAN VITONE, Associate Professor – M.F.A., Massachusetts College of Art; Carnegie Mellon, 2004–.


ROBERT O. SWINEHART, Professor of Design, Emeritus – M.F.A., Northern Illinois University; Carnegie Mellon, 1974–.