

Design, B.Des.

The Design Curriculum

Minimum units required for Bachelor of Design 360

The design curriculum is for students interested in full-time undergraduate study leading to entry-level professional employment or advanced graduate study in the areas of Communication Design, Product Design, or Design for Environments. The first year is a period of discovery, where students 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 area(s) of specialization. The fourth year is a period of integration and advanced study, with studio projects involving teams of students from all areas of design. 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.

Foundation Year

In their first year, students are introduced to all three areas of design specialty: Product (Industrial), Communication (Graphic), and digital and physical Environments. Here, they explore these unique and complementary areas of design and gain a wide range of skill sets such as systems thinking, iterative process, collaboration and visualization, and work in both two and three dimensional materials as well as digital media.

At the end of their first year, students are given the opportunity to begin to focus their interests in two of three design areas (products/communications/environments) and will eventually decide upon a single area of focus or a dual path of study.

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

First Year

Fall

Studio	Units
51-101 Studio: Survey of Design	10
	10
Ideas and Methods	Units
51-121 Visualizing	10
	10
Design Studies	Units
51-175 Design Studies: Place	5
51-177 Design Studies: Histories	5
	10
General Education	Units
76-101 Interpretation and Argument	9
85-102 Introduction to Psychology	9
or 85-211 Cognitive Psychology	
or 85-241 Social Psychology	
88-120 Reason, Passion and Cognition	9
99-101 Core@CMU	3
	30

Spring

Studio	Units
51-102 Design Lab	10
	10
Ideas and Methods	Units
51-122 Collaborative Visualizing	10
51-132 Introduction to Photo Design	10
	20

Design Studies	Units
51-176 Design Studies: Futures	5
51-178 Design Studies: Experience	5
	10

Humanities & Social Sciences	Units
One course in the Dietrich College of Humanities & Social Sciences	9

Second Year

Following the first-year program, students select one out of three areas of interest: Products[P], Communications[C], Environments[E]. Students investigate the relationships people form with designed artifacts and the roles that physical, visual, and digital forms play in our lives. They apply what they learn to the design of products, communications, and environments that facilitate interactions. 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.

Second Year

Fall

Studio	Units
51-201 Communications Studio I: Understanding Form & Context (pick one)	9
51-211 Products Studio I: Understanding Form & Context	9
51-265 Environments Studio I: Understanding Form & Context	9
Ideas and Methods	Units
51-203 Prototyping Lab I: Communications	9
51-243 Prototyping Lab I: Products	4.5
Products Track is required to take 243 and 251	
51-251 Prototyping Lab I: Digital Prototyping	4.5
51-267 Prototyping Lab I: Environments	9
51-229 Digital Imaging	9
51-242 How Things Work: Mechanics and Electronics	9
51-283 Narratives in Space and Time	9

Products Track is required to take 243 and 251

Design Studies	Units
51-277 Design Studies: Systems	5
51-279 Design Studies: Cultures	5
	10
General Education	Units
xx-xxx Academic Elective	9
	9

Spring

Studio	Units
51-228 Communications Studio II: Designing Communications for Interactions	9
or 51-248 Products Studio II: Designing Products for Interactions	
or 51-268 Environments Studio II: Designing Environments for Interaction	
	9

Ideas and Methods	Units
51-248 Products Studio II: Designing Products for Interactions	9
Products students are also required to take 51-344 Advanced Digital Prototyping	
or 51-228 Communications Studio II: Designing Communications for Interactions	
or 51-268 Environments Studio II: Designing Environments for Interaction	

Design Studies		Units
51-282	Design Studies: Persuasion	5
51-284	Design Studies: Power	5
		10
General Education		Units
xx-xxx	Academic Elective	9
xx-xxx	Free Elective	9
		18

Third Year

In the fifth and sixth semesters, students may choose to continue their fourth semester area of focus, or they may choose to study their second area of study from the third semester. Students study how design functions at various levels of scale and degrees of complexity situated in specific contexts. They design products, communications, and environments that function as cohesive systems that live within the built and social worlds.

Third Year

Fall

Studio		Units
51-323	Communications Studio III: Designing for Complex Communication Systems	10
or 51-343	Products Studio III: Designing for Complex Products Systems	
or 51-363	Environments Studio III: Designing for Complex Environment Systems	
		10

Ideas and Methods (Select two Design Electives)		Units
51-xxx	Design Elective	9
51-xxx	Design Elective	9
		18

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

Spring

Studio		Units
51-330	Communications Studio IV: Designing Communications for Social Systems	10
or 51-350	Products Studio IV: Designing Products for Social Systems	
or 51-360	Environments Studio IV: Designing Environments for Social Systems	
		10

Ideas and Methods (Select two Design Electives)		Units
51-xxx	Design Elective	9
51-xxx	Design Elective	9

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

Fourth Year

In the senior year, students work to identify their next steps in professional practice, entrepreneurship, or in academia. They apply their design skills and knowledge to client-based and/or self-defined projects that focus on the design of services or social innovation.

The fall semester features the Design Research Studio, a semester-long project where students work in teams applying skill and knowledge learned in Products, Communications, and/or Environments. In the spring the Capstone Project challenges students to work independently on a semester-long project, deepening their understanding of service or social innovation design principles.

Fourth Year

Fall

Studio		Units
51-481	Senior Design Studio	12
		12

Ideas and Methods (Select one Design Elective)		Units
51-xxx	Design Elective	9
		9

General Education		Units
xx-xxx	Academic Elective	9
xx-xxx	Free Elective	10
		19

Spring

Studio		Units
51-480	Design Capstone Project	12
		12

Ideas and Methods (Select one Design Elective)		Units
51-xxx	Design Elective	9
		9

General Education		Units
xx-xxx	Free Elective	15
		15

Bachelor of Design Tracks

The School offers a Bachelor of Design with tracks in Communications, Products, or Environments.

Communications

The ability to communicate and shape meaning is one of the most powerful and ubiquitous forms of design in today's world. Students learn to design effective communications across a wide variety of media that *always* exist within complex webs of interactions between people, products, and environments. Areas of study include narrative and storytelling, information design, and a variety of analog and digital visualization techniques. Students develop the ability to identify specific audiences and communicate to them through effective visual, verbal and aural communications that educate, inform and delight.

They study the dynamic and 'emergent' characteristics of communications in a globally networked society where technologies and modes of individual and mass communication are constantly changing. Students learn systems thinking and engage in an iterative, multi-disciplinary and collaborative design process that involves research, observation, prototyping and rigorous evaluation. Students develop the ability to identify and communicate to specific audiences through effective visual and verbal communications that educate, inform, delight and invite participation.

Products

Students learn to design products and their interactions within the context of human needs and they develop a deep understanding of the ways in which products shape behavior. Our curriculum acknowledges that no product exists in isolation—it is *always* part of a larger system comprised of people, communications and environments. Within the context of design for service, products exist as 'touchpoints' in a service ecology. For this reason, students learn systems thinking and engage in an iterative, multi-disciplinary and collaborative design process that involves research, observation, modeling/prototyping and rigorous evaluation.

Students are introduced to current production and manufacturing processes as well as sustainable approaches, such as cradle-to-cradle, lifecycle analysis and the use of new, more environmentally friendly materials. The School has a well-equipped analog and digital prototyping facility where students work with traditional materials such as wood and metal and learn to design and prototype using CAD software and 3D digital printers.

Environments

Students learn to design for complex environments that exist in the digital, physical and multi-modal realms. Most of the products and communications we interact with are situated within complex physical spaces (our homes, classrooms, places of business, shopping malls, even amusement parks). We also interact with complex online environments such as large websites, social networking and virtual reality environments. And increasingly we interact in 'smart' physical spaces with multi-modal communications in a combination of the analog and the digital.

In our curriculum, environments are seen as integrated and dynamic systems that require the design of interactions at multiple levels of scale. Students acquire a diverse set of skills that includes a deep understanding of spatial relationships, designing *with* and *for* emerging, multi-media technologies and an understanding of the cognitive challenges presented by multi-modal spaces.

Students who focus on the design of environments delve deep into systems thinking and systems dynamics and spend time learning to collaborate and lead within multi-disciplinary teams (solving large problems involving complex spaces almost always involves teams of people from different disciplines).