

# INDUSTRIAL DESIGN

## Overview

<http://www.design.iastate.edu/industrialdesign/index.php> (<http://www.design.iastate.edu/industrialdesign/>)

The vision of the Department of Industrial Design is to empower the next generation of designers to identify and solve small to large scale problems in order to devise systemic, forward-thinking solutions, mindful of societal needs and ecological repercussions, fostering health and well-being for people and the environment.

We do this by providing students with the necessary tools and experiences, spanning across the product development timeline from the fuzzy front-end of problem finding through design research and synthesis, to discovery of meaningful design solutions that can range from products to services and systems. The industrial design program offers opportunities to collaborate with diverse disciplines on campus and beyond to tackle a wide variety of local and global design challenges.

Degree offerings include the Bachelor of Industrial Design (B.I.D.) and the Master of Industrial Design (M.I.D.).

## Undergraduate Program Structure

Students in this program take a carefully defined sequence of courses developed to give them exposure and practice in the areas of theory and skill required by industrial design. These include design sketching and visualization, form development, history, creative thinking, engineering principles, research, design methodology, human factors, computer-aided design, manufacturing techniques, commercial factors, management, strategic design development, service design, and user experience design. In their third year, students select electives within and outside of the department, defining current issues in the profession. The upper-level studio classes are reserved for study abroad programs connecting students to the global design community, internships, and industry-sponsored projects with students from other departments and colleges. The curriculum aims to develop the ability to cope with diverse problem areas in industrial design, without restricting them to specific fields in design.

An industrial design degree from Iowa State prepares students for creative careers in private and corporate practice, with design consulting companies, in-house design departments, and product manufacturers.

Career choices with an industrial design degree include (but are not limited to):

Product designer, design researcher, automotive designer, footwear & accessory designer, construction & agricultural equipment designer, furniture & lighting designer, interaction designer, service designer, exhibit

designer, packaging designer, advertising & experience designer, UX designer and researcher.

## Degree Requirements

The curriculum in Industrial Design leads to a 133-credit undergraduate Bachelor of Industrial Design including the first year Core Design Program.

Admission into the professional program depends upon available departmental resources. Updated information on admission criteria is announced yearly on the College of Design website.

Transfer students with studio credits from other programs, colleges, and universities must present a portfolio of work done in those courses, for departmental review, in order to have the credits apply toward studio. Students are required to present this portfolio upon admission and prior to registration for classes. Arrangements for this process must be made with department advisors.

A 60-credit post-professional graduate program is also offered leading to the terminal degree Master of Industrial Design.

### Total Degree Requirements: 133 credits

Only 65 credits from a two-year institution may apply, which may include up to 16 technical credits; 9 P-NP credits of free electives; 2.00 minimum GPA.

### International Perspective: 3 credits

### U.S. Diversity: 3 credits

### Communications: 10 credits

ENGL 150	Critical Thinking and Communication (*)	3
ENGL 250	Written, Oral, Visual, and Electronic Composition (*)	3
LIB 160	Introduction to College Level Research	1
One of the following:		3
COMST 101	Introduction to Communication Studies	
COMST 211	Interpersonal Communication	
CMDIS 286	Communicating with the Deaf	
SP CM 110	Listening	
SP CM 212	Fundamentals of Public Speaking	
THTRE 251	Acting Foundations	

**Total Credits** **10**

\* with a C or better

### Humanities: 6 credits

6 credits from program curriculum sheet

### Social Sciences: 6 credits

6 credits from program curriculum sheet

**Math/Physics/Biol.Sciences: 6 credits**

6 credits from program curriculum sheet

**General Education Courses: 9 credits**

6 credits of course level 300-400 from program curriculum sheet:  
complete 3 credits from department curriculum sheet.

**College of Design Core: 12 credits**

DSN S 102	Design Studio I	4
DSN S 115	Design Collaborative Seminar	1
or DSN S 110	Design Exchange Seminar I	
DSN S 131	Drawing I	4
DSN S 183	Design in Context	3
<b>Total Credits</b>		<b>12</b>

**History, Theory and Criticism: 15 credits**

IND D 210	Fundamentals of Industrial Design	3
IND D 280	History of Industrial Design	3
IND D 380	History and Culture of Objects	3
Two courses from the approved course list; must include one 300 level or higher.		6
<b>Total Credits</b>		<b>15</b>

**Industrial Design: 60 credits**

IND D 201	Industrial Design Studio I	6
IND D 202	Industrial Design Studio II	6
IND D 220	Concept Sketching	3
IND D 250	Activity-Centered Industrial Design	3
IND D 260	Design engineering: From Thought to Thing	3
IND D 301	Industrial Design Studio III	6
IND D 320	Design Research Methods	3
IND D 330	Creative Thinking in Design	3
IND D 340	Digital Design Technologies	3
IND D 360	Materials and Processes for Industrial Design	3
IND D 370	STEM literacy: How Things Work	3
IND D 440	Portfolio and Professional Practice	3
IND D 499	Senior Project	6
<b>Total Credits</b>		<b>51</b>
Experiential Learning: 9 credits		9
IND D 302	Industrial Design Studio IV	
IND D 397	Industrial Design Internship	
IND D 401	Industrial Design Studio V: Commercial Practices	
IND D 402	Industrial Design Studio: Design for Social Impact	
IND D 495	Study Abroad Option	
IND D 507	Industrial Design Practicum	
IND D 590	Special Topics	

IND D 592	Special Projects	
IND D 593	Experiential Learning Special Projects	
IND D 595	Study Abroad Option	
IND D 597	Internship	
<b>Total Credits</b>		<b>60</b>

**Industrial Design departmental electives: 9 credits**

List of electives assembled to support a focused area of study.

IND D 240	Digital Tools For Industrial Design	3
IND D 350	Applied Human Factors Lab	1
IND D 435	Strategic Design: Project Management	3
IND D 460	Product Realization	3
IND D 520	Design Theory Methodology	3
IND D 530	Design Thinking	3
IND D 540	Design Communication	3
IND D 550	Human Factors: User Experience Design	3
IND D 560	Change by Design: Disruptive Innovation	3
IND D 570	Systems Thinking in Design	3
IND D 580	Material Culture and Values	3

Industrial Design, B.I.D.

**First Year**

Fall	Credits	Spring	Credits
DSN S 102	4	DSN S 102	4
or 131		or 131	
DSN S 183	3	DSN S 183	3
(or General Education)		(or General Education)	
ENGL 150	3	ENGL 150	3
(or General Education)		(or General Education)	
DSN S 110	1	General Education	3
or 115		Education	
General Education	3	General Education	3
General Education	3	LIB 160	1
<b>17</b>		<b>17</b>	

**Second Year**

Fall	Credits	Spring	Credits
IND D 201	6	IND D 202	6
IND D 210	3	IND D 250	3
IND D 220	3	IND D 260	3

IND D 280	3 Departmental elective	3			
		<b>15</b>	<b>15</b>		
<b>Third Year</b>					
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>	<b>Summer</b>	<b>Credits</b>
IND D 301	6 Experiential Learning	3 IND D 330	3	6 Study Abroad	6
IND D 320	3 IND D 340	3 IND D 370	3	3 Elective	3
IND D 340	3 IND D 360	3 IND D 380	3		
		<b>15</b>	<b>15</b>		<b>9</b>
<b>Fourth Year</b>					
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>		
Experiential Learning	3-6 IND D 499	3 IND D 440	3	6	
IND D 440	3 Departmental Elective	3 Departmental elective	3	3	
Gen Ed or Elective	3 Gen Ed or Elective	3	3		
		<b>12-15</b>	<b>15</b>		

## Graduate Program

Designing for Future Industries

### Master of Industrial Design | MID

60 credit study | distributed across two consecutive years

How will (Industrial) Design look like in the future? Where is the field going? What new methods and methodologies will be needed to tackle current and emergent global issues? What will it mean to be human in the age of Artificial Intelligence? How will design disciplines answer to these new futures, new typologies of users and ever-changing technologies?

These are just some of the questions that keep us awake in the MID program! In an age where new technologies and automation are continually changing the way we think about human activities and future jobs, Industrial Design is faced with challenges that question the field itself. Designing successfully for and with new industries and technologies will require ambidextrous designers, that are flexible, critical, creative and highly capable of working and collaborating in different contexts, across domains and most importantly under different roles. Design practitioners, scholars and students will need to be more than developers, managers or human-centered researchers - they will need to be change-makers, leaders and above all Connectors. The MID program

offers a competence-based curriculum, with tools and training on how to be[come] this design connector of the future.

### Description of the degree | the bigger picture

The Master of Industrial Design (MID) program at the College of Design, Iowa State University, specifically emphasizes *systems thinking* as one of its core languages when reframing problems as opportunities for future contexts. Systems design, change theory, problem reframing, strategic and creative thinking, and innovation by design are some of the fundamentals of the MInD framework.

Industrial Design is a human-centered discipline that questions existing boundaries and makes connections among diverse domains. Therefore, the program challenges students to develop the ability to recognize and define problems in new ways, and thus find opportunities others might have missed or undervalued. As a strategic problem-solving process, Industrial Design tries to reimagine how we should go about developing innovative, sustainable and durable solutions for people and society at large that genuinely lead to better quality of life and better futures. The MID program actively connects with other knowledge domains and disciplines, to research how things are with the drive to propose how they ought to be. This is achieved through the challenging balance between critical and creative ways of thinking [and working] when devising novel, useful and meaningful artifacts, services, experiences, and environments. Ultimately, the program integrates the design triad of people, business, and technology, in innovative ways, and is based on insightful research to create new value and competitive advantage in a variety of societal, economic, and environmental contexts.

### Details about the degree | zooming in

The MID program is centralized on the creation and application of new knowledge through in-depth investigations of existing 'gaps' culminating in a graduation project, which includes a creative component (grad studio-based) or a written thesis (research project). At the same time, students expand their design practice skills using different methodologies, collaboratively, throughout the entire design process. They explore, generate, transfer, and implement interdisciplinary insights into foundational knowledge for the discipline of Industrial Design.

The MID is accredited and recognized as a terminal degree in Industrial Design. This graduate program is designed to offer significant mix of skills and experiences, including students from different disciplinary backgrounds, faculty-directed research programs, internships, international study abroad, industry-sponsored coursework, and also teaching experience.

The MID program is positioned in one of the most comprehensive design colleges in the country, facilitating the integration of methodologies and skill sets from multiple disciplines. Additionally, the program has

established curricular connections to the nationally ranked College of Engineering and the College of Business at Iowa State University, as well as to numerous industry collaborators and practitioners.

Degree requirements includes a completion of a 2-year, 60-credit program, including a required core (45 credits), departmental electives (9-12 credits) and experiential learning credits (3-6 electives). The final MID Graduate Project includes one of the following: creative component with a design process report opting for one of the following modes as Graduate Project: creative component with a design process report (6 credits) or research-based written thesis (6 credits). To note that students and their supervisory team work collaboratively on this required final grad project, integrating both theory and fabrication in the creative component, and research with/for a complex design problem.

## Curriculum Outline

Required Core Courses: 45 cr.

IND D 501	Industrial Design Graduate Studio I	6
IND D 502	Industrial Design Graduate Studio II	6
IND D 520	Design Theory Methodology	3
IND D 530	Design Thinking	3
IND D 550	Human Factors: User Experience Design	3
IND D 560	Change by Design: Disruptive Innovation	3
IND D 570	Systems Thinking in Design	3
IND D 580	Material Culture and Values	3
IND D 601	Industrial Design Graduate Studio III	6
IND D 602	MInD Graduate Project	6

OR

IND D 699	MInD Graduate Thesis	
IND D 640	Advanced Digital Technologies	3

Departmental Electives 15 cr.

IND D 435	Strategic Design: Project Management	3
IND D 440	Portfolio and Professional Practice	3
IND D 460	Product Realization	3
IND D 505	MInD Lab I	3
IND D 510	MInD Lab II	3
IND D 515	Graduate Colloquium	1
IND D 540	Design Communication	3
IND D 630	Critical Reflections for Thesis Preparation	3

Or Experiential Learning: 15 cr.

IND D 592	Special Projects (3-6 credits)	arr	†
IND D 593	Experiential Learning Special Projects (3-6 credits)	arr	†
IND D 595	Study Abroad Option	6	

IND D 597	Internship	6
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† Arranged with instructor.

### First Year

Fall	Credits Spring	Credits
IND D 501	6 IND D 502 or DSN S 546	6
IND D 520	3 IND D 540	3
IND D 530	3 IND D 550	3
IND D 570	3 IND D 580	3
Departmental Elective	3 Departmental Elective	3
<b>18</b>		<b>18</b>

### Second Year

Fall	Credits Spring	Credits
IND D 601	6 IND D 602 or 699	6
IND D 560	3 IND D 640	3
ISU or College Elective	3 ISU or College elective	3
ISU or College Elective	3 ISU or College Elective	3
<b>15</b>		<b>15</b>

Admission to the MID program is by application to the department and to the Graduate College. The MID program does not require a bachelor's degree in industrial design and is open to students from any other disciplinary background. Information about our programs and how to apply can be obtained from the department's web page at: <https://www.design.iastate.edu/industrial-design/degrees/master-of-industrial-design/>, or send an email directly to the Director of Graduate Studies.