

Industrial Design

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

Undergraduate Study

B.I.D. Bachelor of Industrial Design 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 drawing, design methodology, human factors, computer-aided design, manufacturing and commercial factors. In their third year, students will select electives from concentration tracks arranged around specialty areas and current issues in the profession. The upper level studio classes are reserved for study abroad, internships, and sponsored projects with students from other departments and colleges.

Graduate Study

The Master of Industrial Design (M.I.D.) program emphasizes strategy and innovation and consists of two tracks: research and practice. The research track focus on the creation and application of new knowledge through research and culminates in a thesis. The practice track specializes in commercial issues of management and product realization and culminates in a final project. The M.I.D. requires a minimum of 45 credits. Applicants without industrial design degree or background may be required to take up to 18 additional credits for successful completion.

Curriculum in Industrial Design

The Curriculum in Industrial Design leads to a 132.5 credit undergraduate Bachelor of Industrial Design including the 30.5 credit core Design Program.

Admission into the professional program depends upon available resources and is subject to the approval of a faculty committee at the completion of the Core Design Program. Applicants are reviewed on the basis of academic performance, a portfolio of original work, and a written essay.

Transfer students with studio credits from other programs, colleges, and universities must present for departmental review a portfolio of work done in those courses in order to have the credits apply toward studio requirements. 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 45 graduate credit post-professional graduate program is also offered leading to the degree Master of Industrial Design. (NOTE: Applicants without a degree or background in industrial design may be required to complete up to 18 additional credits of coursework.)

Total Degree Requirements: 132.5 cr.

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

International Perspective: 3 cr.

U.S. Diversity: 3 cr.

Communications: 10 cr.

ENGL 150	Critical Thinking and Communication (*)	3
ENGL 250	Written, Oral, Visual, and Electronic Composition (*)	3
LIB 160	Information Literacy	1
One of the following:		3
COMST 101	Introduction to Communication Studies	
COMST 102	Introduction to Interpersonal Communication	
CMDIS 286	Communicating with the Deaf	
SP CM 110	Listening	
SP CM 212	Fundamentals of Public Speaking	
THTRE 251	Acting I	
Total Credits		10

* with a C- or better

Humanities: 6 cr.

6 cr. from program curriculum sheet

Social Sciences: 6 cr.

6 cr. from program curriculum sheet

Math/Physics/Biol.Sciences: 6 cr.

6 cr. from program curriculum sheet

General Education Courses: 9 cr.

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

College of Design Core: 11.5 cr.

DSN S 102	Design Studio I	4
DSN S 115	Design Collaborative Seminar	0.5
or DSN S 110	Design Exchange Seminar I	
DSN S 131	Design Representation	4
DSN S 183	Design Cultures	3
Total Credits		11.5

Art and Design History: 9 cr.

IND D 388	History of Industrial Design	3
Two courses from the approved course list; must include one 300 level or higher.		6

Industrial Design: 60 cr.

IND D 201	Industrial Design Studio I	6
IND D 202	Industrial Design Studio II	6
IND D 231	Introduction to Industrial Design	3
IND D 232	Creative Thinking for Industrial Design	3
ARTID 251	Human Factors in Design	3
ENGR 260	Engineering: Getting from Thought to Thing	3
ENGR 270	Survey of How Things Work	3
IND D 301	Industrial Design Studio III	6
IND D 332	Design Research Methods	3
IND D 341	Computer Aided Industrial Design I	3
IND D 499	Senior Project	6
IND D 543	Portfolio and Professional Practice	3
Two of the following:		12
IND D 397	Industrial Design Internship	
IND D 495	Study Abroad Option	
IND D 507	Industrial Design Practicum	
Total Credits		60

Concentration track electives: 9 cr.

Sequence of electives assembled to create a focused area of study.

Electives: 6 cr.

See also: a 4-year plan of study grid showing course template by semester.

Courses primarily for undergraduates:

IND D 201. Industrial Design Studio I.

(0-12) Cr. 6. F. *Prereq:* Admission to the industrial design program, enrollment in IND D 231.

Product scale form development and visual communication.

IND D 202. Industrial Design Studio II.

(0-12) Cr. 6. S. *Prereq:* IND D 201

Principles of structure and function in products.

IND D 231. Introduction to Industrial Design.

(3-0) Cr. 3. F. *Prereq:* Admission to the industrial design program, enrollment in IND D 201.

The history, definition, scope, and basic principles of industrial design. Overview of technical, artistic, and sociological context of the profession.

IND D 232. Creative Thinking for Industrial Design.

(3-0) Cr. 3. S. *Prereq:* IND D 231

Exploration of strategies, methods, and processes associated with creative thinking skills and problem solving. Discussion of the nature of creativity and its implications in different contexts that cross content boundaries.

IND D 301. Industrial Design Studio III.

(0-12) Cr. 6. F. *Prereq:* IND D 202

Systematic design methodology and integration of creative thinking techniques.

IND D 302. Industrial Design Studio IV.

(0-12) Cr. 6. F.S. Prereq: IND D 301
Exploration of commercial factors in industrial design.

IND D 332. Design Research Methods.

(3-0) Cr. 3. F. Prereq: IND D 232
Survey of qualitative and quantitative methods, including ethnography and interviews, focused on contextual user-centered research. Emphasis on user data collection, visualization, and synthesis as a source for design.

IND D 334. Materials and Processes.

(3-0) Cr. 3. F. Prereq: INDD 202 and IND D 231
Introduction to materials and manufacturing methods for mass production and distribution of products.

IND D 341. Computer Aided Industrial Design I.

(0-6) Cr. 3. S. Prereq: IND D 301
Emphasis on the computer as an industrial design and visualization tool.

IND D 342. Computer Aided Industrial Design II.

(0-6) Cr. 3. S. Prereq: IND D 341
Advanced concepts in computer to machine interface for manufacture.

IND D 351. Applied Human Factors Lab.

(0-1) Cr. 1. F. Prereq: IND D 231 and enrollment in ARTID 251
Theory and application of human factors issues in the industrial design field, specifically their impact on the relationship of the user, the product, and the product systems.

IND D 397. Industrial Design Internship.

(0-12) Cr. 6. F.S.SS. Prereq: IND D 202, 18 credits in industrial design, permission of instructor.
Professional industrial design, off-campus experience.

IND D 401. Industrial Design Studio.

(0-12) Cr. 6. F.S. Prereq: IND D 301
Advanced topics focused on industrial design applications. Topics vary each time offered.

IND D 495. Study Abroad Option.

(0-12) Cr. 6. SS. Prereq: IND D 301 and permission of instructor.
International study abroad program. Visits to design studios, showrooms, museums and manufacturing facilities.

IND D 499. Senior Project.

(0-12) Cr. 6. S. Prereq: IND D 302, IND D 401 or IND D 507 and senior standing.
Advanced practice in specialized area of industrial design. Topics vary.

Courses primarily for graduate students, open to qualified undergraduates:**IND D 501. Industrial Design Studio Intensive I.**

(0-12) Cr. 6. F. Prereq: Admission into the Graduate Intensive Track or graduate standing in the industrial design program.
Basic concepts and techniques for industrial design. Emphasis on form development, structure, function and communication.

IND D 502. Industrial Design Studio Intensive II.

(0-12) Cr. 6. S. Prereq: Admission into the Graduate Intensive Track of graduate standing in the industrial design program.
Advanced concepts and techniques for industrial design. Emphasis on systematic design methodology and commercial factors.

IND D 503. Industrial Design Studio I.

(0-12) Cr. 6. F. Prereq: Admission to the industrial design graduate program or completion of Graduate Intensive Track.
Advanced, project-based application of industrial design concepts and techniques.

IND D 504. Industrial Design Studio II.

(0-12) Cr. 6. S. Prereq: IND D 502.
Advanced, project based application of industrial design concepts and techniques.

IND D 507. Industrial Design Practicum.

(0-12) Cr. 6. F.S. Prereq: Evidence of satisfactory experience in area of specialization; admitted by application and written permission of instructor only.
Studio project focused on topics generated with external partners. Topics vary.

IND D 511. Colloquium.

(1-0) Cr. 1. F.S. Prereq: Admission into the Graduate Intensive Track of graduate standing in the industrial design program.
Presentation and discussion of creative activity carried out in various design disciplines and their relationship to industrial design. Seminar sessions focusing on exemplary pieces of design research undertaken by faculty and graduate students in the design field.

IND D 532. Design Thinking.

(3-0) Cr. 3. F. Prereq: Admission into the Graduate Intensive Track or graduate standing in the industrial design program
Exploration of problem-solving methods for systems, products, and processes across all contexts. Strategies and tactics for problem identification are covered, along with creative thinking focusing on contemporary real-world problems and opportunities.

IND D 534. Materials and Applications.

(3-0) Cr. 3. S. Prereq: Admission into the Graduate Intensive Track or graduate standing in the industrial design program.
Introduction to materials and manufacturing methods for products. Exploration of emerging materials and new applications.

IND D 540. Visual Communication for Industrial Design.

(0-6) Cr. 3. F. Prereq: Admission into the Graduate Intensive Track of graduate standing in the industrial design program.
Exploration of multiple visual communication techniques used in industrial design and product development.

IND D 541. Computer Aided Industrial Design.

(0-6) Cr. 3. F.S. Prereq: Completion of industrial design studio or permission of instructor.
Exploration of the computer as an industrial design and visualization tool.
Advanced concepts in computer to machine interface for manufacture.

IND D 543. Portfolio and Professional Practice.

(1-4) Cr. 3. F.S. Prereq: Senior or Graduate standing in the industrial design program.
Discussion of industrial design practice. Development and preparation of personal promotional materials for a range of media.

IND D 551. Human Factors.

(3-0) Cr. 3. S. Prereq: IND D 532
Human factors issues and the study of relationships between the user, the product, and the human body and its physical functions. Investigations of bio-mechanics, anthropometry, instrumental displays and control, and their measurement as they relate to the design process.

IND D 590. Special Topics.

(1-4) Cr. 3. Repeatable. F.S.SS. Prereq: Completion of industrial design studio or permission of instructor.
Advanced topics focused on industrial design applications. Topics include theory, criticism, methodology, experimental techniques, three dimensional design, distributed collaboration.

IND D 592. Special Projects.

Cr. arr. Repeatable. F.S.SS. Prereq: Completion of industrial design studio or permission of instructor.
Planned projects in topics related to theory, criticism, methodology, experimental techniques, three dimensional design, distributed collaboration.

IND D 595. Study Abroad Option.

(0-12) Cr. 6. F.S.SS. Prereq: Completion of industrial design studio or permission of instructor.
International study abroad program. Visits to design studios, showrooms, museums and manufacturing facilities.

IND D 597. Internship.

(0-12) Cr. 6. F.S.SS. Prereq: Completion of Industrial design studio or permission of instructor.
Professional industrial design, off-campus experience.

Courses for graduate students:**IND D 601. Graduate Project I.**

(0-12) Cr. 6. F. Prereq: IND D 503, IND D 532, IND D 631
Advanced creative component in specialized area of focus within industrial design. Culminates in a development plan and supporting documentary.

IND D 602. Graduate Project II.

(0-12) Cr. 6. S. Prereq: IND D 601
Advanced creative component in specialized area of focus within industrial design. Culminates in a physical or digital artifact and supporting documentation.

IND D 631. Design Research Methods.

(3-0) Cr. 3. S. Prereq: IND D 532
Introduction to a number of qualitative and quantitative research methods applied in the field of industrial design. Research strategies and application of selected methods to different contextual issues are covered.

IND D 699. Thesis.

(0-12) Cr. 6. Repeatable. F.S.SS. *Prereq: IND D 503, IND D 532, IND D 631*
Advanced research component in specialized area of focus within industrial design. Culminates in a thesis document.