INDUSTRIAL DESIGN (IND D)

Any experimental courses offered by IND D can be found at:
registrar.iastate.edu/faculty-staff/courses/explistings/ (http://www.registrar.iastate.edu/faculty-staff/courses/explistings/)

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
Through a progressive series of structured exercises and projects, IND D 202 covers basic modeling principles and three dimensional form development required for industrial design activity. These activities include explorative studies in: assembly, disassembly, process efficiency, structures, materials identification, hand fabrication, and testing. Students will work in a variety of media including: paper, foam core, polystyrene, and wood.

IND D 231: Introduction to Industrial Design
(3-0) Cr. 3. F.
Prereq: Admission to the industrial design program or by permission of the instructor.
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 251: Activity-Centered Industrial Design
(3-0) Cr. 3.
Prereq: Admitted to Industrial Design Program and by permission of the instructor
Introduction to design for complex and dynamic situations that include people, products, activities and environments. Emphasizes the relationship between internal and external factors that impact pleasure and performance in these systems. Includes an overview of human diversity and examines the role of the industrial designer in developing the artifacts of daily activity.
Meets U.S. Diversity Requirement

IND D 260: Engineering: Getting from Thought to Thing
(Cross-listed with ENGR). (3-0) Cr. 3. F.S.
What is engineering, technology and their roles in society? Investigation of engineering methods through case studies of everyday objects. Explore questions about the impact of technology in society. Apply engineering methods to design and failure analysis.

IND D 270: Survey of How Things Work
(Cross-listed with ENGR). (3-0) Cr. 3. F.S.
Removing mysteries surrounding science and technology. Identify key concepts from applied science and technology to obtain better understanding on how things work. Review and explain the principles behind the technologies which define our modern way of life. A survey of broad range of technology could include: cell phones, GPS, radio, television, computers, ultrasound, microwave ovens, automobile, bioengineering and other industrial and consumer technologies. Common day technology examples illustrating scientific knowledge and applications.

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 or permission of instructor
Exploration of commercial factors in industrial design. Meets Industrial Design Experiential Learning Requirements.

IND D 332: Design Research Methods
(3-0) Cr. 3. F.
Prereq: IND D 231 or permission of instructor.
Survey of qualitative and quantitative methods with an emphasis on contextual user-centered research. Integration of user data collection, visualization, and synthesis as a source for design. Experience of a small-scale research practice related to industrial design.

IND D 334: Materials and Processes for Industrial Design
(3-0) Cr. 3. S.
Prereq: IND D 201 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. F.S.
Prereq: IND D 301
Emphasis on the computer as an industrial design and visualization tool.

IND D 351: Applied Human Factors Lab
(0-1) Cr. 1. F.
Prereq: IND D 231 and enrollment in IND D 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 387: History of Industrial Design I
(3-0) Cr. 3. F.
Prereq: 30 credits earned at ISU
Introduction to contemporary and historic factors influencing industrial design craft and practice. Discussion of social, political, cultural and technological context for industrial design.
Meets U.S. Diversity Requirement

IND D 388: History and Culture of Industrial Design II
(3-0) Cr. 3. S.
Prereq: 30 credits earned at ISU.
Critical examination of meanings of objects from the perspectives of history, design, material culture, philosophy and cultural studies. Discussion of social, political, cultural and technological context for industrial design.

IND D 397: Industrial Design Internship
(0-12) Cr. 6. Repeatable.
Prereq: IND D 202, 18 credits in industrial design, permission of instructor.
Professional industrial design, off-campus experience. Meets Industrial Design Experiential Learning Requirements.

IND D 401: Industrial Design Studio
(0-12) Cr. 6. F.S.
Prereq: IND D 301 or permission of instructor
Advanced topics focused on industrial design applications. Topics vary each time offered. Meets Industrial Design Experiential Learning Requirements.

IND D 490: Special Topics
Cr. arr. Repeatable. F.S.SS.
Prereq: Completion of industrial design studio or permission of instructor.
Advanced topics focused on industrial design applications. Topics vary each time offered. A. Theory, Criticism, Methodology B. Experimental Techniques C. Three Dimensional Design D. Distributed Collaboration.

IND D 490A: Special Topics: Theory, Criticism, Methodology
Cr. arr. Repeatable. F.S.SS.
Prereq: Completion of industrial design studio or permission of instructor.
Advanced topics focused on industrial design applications. Topics vary each time offered.

IND D 490B: Special Topics: Experimental Techniques
Cr. arr. Repeatable. F.S.SS.
Prereq: Completion of industrial design studio or permission of instructor.
Advanced topics focused on industrial design applications. Topics vary each time offered.

IND D 490C: Special Topics: Three-Dimensional Design
Cr. arr. Repeatable. F.S.SS.
Prereq: Completion of industrial design studio or permission of instructor.
Advanced topics focused on industrial design applications. Topics vary each time offered.

IND D 490D: Special Topics: Distributed Collaboration
Cr. arr. Repeatable. F.S.SS.
Prereq: Completion of industrial design studio or permission of instructor.
Advanced topics focused on industrial design applications. Topics vary each time offered.

IND D 495: Study Abroad Option
(0-12) Cr. 6. F.S.SS.
Prereq: IND D 202 and permission of instructor
International study abroad program. Visits to design studios, showrooms, museums and manufacturing facilities. Meets Industrial Design Experiential Learning Requirements.

IND D 499: Senior Project
(0-12) Cr. 6.
Prereq: IND D 495 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 or graduate standing in the industrial design program.
Advanced concepts and techniques for industrial design. Emphasis on systematic design methodology and commercial factors, and visual and verbal communication of design problems and solutions.

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, with an emphasis on service and system design, and its implications for the community.

IND D 507: Industrial Design Practicum
(0-12) Cr. 6. Repeatable.
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. Meets Industrial Design Experiential Learning Requirements.

IND D 511: Colloquium
(1-0) Cr. 1. Repeatable. F.S.
Prereq: Admission into the Graduate Intensive Track or 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.S.
Prereq: Senior or graduate standing in any ISU program, or permission of the instructor.
Exploration of design thinking process, toolkits, and mindsets as creative problem solving approaches for systems, products, and processes, across diverse contexts. Strategies for problem-solution co-evolution process, with a focus on collaborative and interdisciplinary design to investigate real-world problems and opportunities.

IND D 534: Product Realization for Industrial Design
(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.S.
Prereq: Graduate or senior status.
Exploration of multiple visual communication techniques primarily used in industrial design with a focus on visually breaking down complex information.

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: Advanced standing in the industrial design program.
Discussion of industrial design practice and career planning. 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. Meets Industrial Design Experiential Learning Requirements.

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 593: Experiential Learning Special Projects
Cr. arr. Repeatable. F.S.SS.
Prereq: Completion of industrial design studio or permission of instructor.
Project based topics related to theory, criticism, methodology, experimental learning, three dimensional design, distributed collaboration that supports experiential learning.

IND D 595: Study Abroad Option
(0-12) Cr. 6. Repeatable. 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. Meets Industrial Design Experiential Learning Requirements.

IND D 597: Internship
(0-12) Cr. 6. Repeatable. F.S.SS.
Prereq: Completion of Industrial design studio or permission of instructor.
Professional industrial design, off-campus experience. Meets Industrial Design Experiential Learning Requirements.

Courses for graduate students:

IND D 601: Graduate Project I
(0-12) Cr. 6. F.
Prereq: IND D 632
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. F.
Prereq: Senior or graduate standing in any ISU program, or permission of the instructor
User-centered research methods to examine the impact of design on humans, environments, and social contexts. Examination and critique of current research methods employed in industrial design, service design and user experience (UX) design.

IND D 632: Thesis Preparation
(3-0) Cr. 3. S.
Prereq: IND D 631
Exploration and formulation of graduate thesis or project topics, with proposed studies and investigations. Introduction to structuring a design research prospectus and university requirements for graduation. Determine Faculty Committee and Program of Study and file forms with Graduate College.

IND D 699: Thesis
(0-12) Cr. 6. Repeatable. F.S.SS.
Prereq: IND D 632
Advanced research component in specialized area of focus within industrial design. Culminates in a thesis document.