

Industrial Design (IND D)

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.