INDUSTRIAL DESIGN (IDUS)

IDUS 100 Introduction to Industrial Design (5 Credits)
The course introduces students to the fundamentals of industrial design through hands-on projects in design thinking, sketching, prototyping, and presentation. Students will explore the creative process, develop essential visualization skills, and experience the joy of designing through iterative exercises and critiques.
Prerequisite(s): DSGN 102; FOUN 113 or FOUN 240; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 215 Contextual Research Methods (5 Credits)
This course presents the techniques necessary to conduct relevant and useful research of a novel domain in context. Students are expected to gain knowledge and expertise to contribute to the design process in user-centered products and systems in which user goals and task needs are given primary importance.
Prerequisite(s): IDUS 100; ARCH 101; ARCH 201; INDS 102; ITGM 130; GAME 130; FIBR 160; FURN 200; GRDS 201; GRDS 205; ADBR 212; ADVE 207 or SERV 216; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 225 Visualizing Ideas: Drawing for Designers (5 Credits)
The course enhances students' ability to visualize and communicate design ideas through drawing, using both traditional and digital tools. Emphasizing rapid perspective construction, visual storming, and concept refinement, students will develop fundamental sketching techniques to express ideation rationale clearly. Through exercises in line quality, weight variation, and product assembly visualization, students will gain confidence in illustrating and presenting their design concepts effectively.
Prerequisite(s): IDUS 100; FURN 201; SERV 216 or FOUN 245.
Attributes: Studio Elective Requirement

IDUS 227 Exploration through Visualization (5 Credits)
In this advanced course of industrial design visualization, students will improve efficiency, clarity, and impact in design sketching by immersing in the dynamic workflow of a professional design studio. Students will develop the ability to generate, iterate, and present concepts rapidly through multiple projects, mastering both traditional techniques and advanced digital rendering. Projects focus on creating compelling sketches to effectively communicate innovative design solutions and brand identity while integrating storytelling into ideation boards. By leveraging both standard and experimental digital tools, students will refine their workflow, optimizing the sketching process to meet professional standards.
Prerequisite(s): SDES 213 or IDUS 225.
Attributes: Studio Elective Requirement

IDUS 231 Digitizing Design Ideas (5 Credits)
The course introduces product design students to essential 3D modeling software, equipping them with the fundamental and practical skills needed to translate design ideas into digital form. Students will explore both surface and solid modeling techniques, learning how to construct, modify, and refine digital models for product visualization and development. Through hands-on exercises and project-based learning, they will gain proficiency in industry-standard tools, preparing them to integrate digital modeling into their design workflow effectively.
Attributes: Studio Elective Requirement

IDUS 241 Design Prototyping (5 Credits)
This course introduces students to the skills needed to create models using physical and digital methods. Students learn the fundamentals of basic workshop tools and safety while also receiving an introduction to digital prototyping equipment. Students develop an understanding of the workflow between digital and physical model development. Special emphasis is placed on assembly and manipulation of handmade and rapid-prototyped components.
Prerequisite(s): SDES 205 or IDUS 231; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 251 Theory of Industrial Design (5 Credits)
Theory of Design immerses students in the powerful theoretical foundations that revolutionized industrial design. Through an exploration of visionary pioneers, students will discover the transformative theories and methodologies that continue to shape our field today. Students will master essential design processes through hands-on exercises and real-world case studies. By developing a strong theoretical framework, students learn to confidently articulate and defend their design decisions, bridging the crucial gap between theory and practice. Students put theory into action, creating innovative solutions while gaining profound insights into how theoretical principles drive successful design outcomes in the professional world through design projects.
Attributes: Studio Elective Requirement

IDUS 252 Applied Design Thinking (5 Credits)
The course provides students with a comprehensive understanding of design criticism, enabling them to analyze, critique, and reflect on design work across various disciplines. Students will engage with key theories and methods of design critique, learn to write critical analyses, and develop the skills to participate in productive design dialogues. Through the study of historical and contemporary examples, students will become adept at articulating their observations and evaluating design with a deeper awareness of cultural, social, and ethical contexts.
Prerequisite(s): CTXT 122.
Attributes: Studio Elective Requirement

IDUS 311 Studio I: Development of Product Form (5 Credits)
The course explores the development of product form and design language, emphasizing the transition between 2D and 3D representations. Students will investigate form-giving principles, proportion, surface transitions, and material considerations to create compelling product aesthetics. By integrating sketching, digital modeling, and physical prototyping, students will refine their ability to communicate design intent effectively. The course fosters critical thinking and iteration, guiding students toward a deeper understanding of form in relation to function, brand identity, and user experience.
Prerequisite(s): (IDUS 241 and IDUS 225) or (IDUS 209 and SDES 213); Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 318 Studio II: Design for Humans (5 Credits)
The course immerses students in human factors in design by exploring anthropometric data and cognitive aspects of user behavior. Through hands-on projects and iterative prototyping, students investigate both physical and cognitive ergonomics to develop innovative, user-centered solutions. Emphasizing empirical research and practical application, the course cultivates a deep understanding of designing for human interaction and equips future designers with the skills needed to address real-world challenges.
Prerequisite(s): (IDUS 241 and IDUS 225) or (IDUS 209 and SDES 213); Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 321 Studio III: Design for Impact (5 Credits)
The course is an immersive studio experience that challenges students to address complex design issues with a focus on creating impact on market and society. Through a targeted design project, students navigate the entire product development process—from in-depth problem analysis to identifying strategic target users and crafting a cohesive design language. Emphasizing real-world applications, the course guides students in creating market-relevant solutions that drive positive societal change. Additionally, it prepares students to collaborate with industry professionals and stakeholders, thereby enhancing communication, critical thinking, and collaborative skills essential for success in today's dynamic design landscape.
Prerequisite(s): (IDUS 313 and IDUS 314) or (IDUS 227 and IDUS 341).
Attributes: Business-focused elective; Studio Elective Requirement

IDUS 331 Advanced Model Building (5 Credits)
This course offers advanced study and practice in the tools, techniques, materials and equipment used to construct professional-quality models and prototypes related to industrial design. Emphasis is placed on accuracy, realism and making multiple function prototypes. Workshop practice and safety are emphasized.
Prerequisite(s): IDUS 212; IDUS 209 or IDUS 241; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 332 Parametric Digital Form Development (5 Credits)
The course introduces students to parametric 3D modeling software, enabling them to create complex digital forms, assemblies, and simulations. Students will develop proficiency in industry-standard tools used in product development, gaining the ability to generate adaptive models that respond to design constraints. Emphasis is placed on integrating parametric design thinking into the iterative design process, enhancing collaboration between industrial designers and engineers. Through hands-on projects, students will refine their digital modeling skills to effectively develop, analyze, and communicate design intent in professional workflows.
Prerequisite(s): (SDES 213 or IDUS 225) and (SDES 215 or IDUS 215) or IDUS 231.
Attributes: Studio Elective Requirement

IDUS 341 Materials and Processes (5 Credits)
This course explores the relationship between design and production, covering both traditional and emerging materials and manufacturing processes. Through hands-on projects and case studies, students will learn how to select and apply specific materials to appropriate manufacturing processes, balancing performance, aesthetics, cost, and sustainability. Emphasis is placed on responsible material choices, circular design strategies, and innovations shaping the future of industrial production. Students will be equipped to design for manufacturing and assembly, ensuring their designs are optimized for efficient and effective production.
Prerequisite(s): IDUS 241; IDUS 209 or IDUS 250; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 360 Advanced Product Rendering (5 Credits)
Students develop the skills necessary to prepare high quality design presentations in mixed media. The course builds on the knowledge and skills developed in earlier courses.
Prerequisite(s): IDUS 250; IDUS 200 or IDUS 311.
Attributes: Studio Elective Requirement

IDUS 371 Professional Development (5 Credits)
The course explores career opportunities in industrial design, including roles as an in-house designer, design consultant, freelancer, and entrepreneur. Students will develop a strategic career plan, craft a compelling personal brand, and build a professional portfolio and resume. Emphasis is placed on effective self-presentation, networking strategies, and professional etiquette. Through hands-on activities, critiques, and a mock interview, students will gain the confidence and skills needed to transition successfully into the professional world of industrial design.
Attributes: Studio Elective Requirement

IDUS 401 Prototype Project Conceptualization (5 Credits)
By working with industry partners, students acquire a professional-level understanding of the challenges and opportunities that emerge when designers collaborate to translate initial concepts into full-scale mockups. In this course, students research human factors, aesthetic considerations, manufacturing requirements and market demands to identify user needs and product opportunities.
Prerequisite(s): IDUS 321; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 402 Prototype Project Construction (5 Credits)
For industrial designers, the ability to resolve mass production and assembly challenges is paramount for professional success. Through collaboration with industry partners, students engage in an iterative design process, employing creative problem-solving strategies to translate their design concepts into fully-operational prototypes.
Prerequisite(s): IDUS 321; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 410 Industrial Design Innovation (5 Credits)
This course explores the methods of identifying and developing inventive solutions to a wide range of design problems. Students are presented with design problems concerning user and function, which require them to develop the skills to devise, test and experiment with new design directions and solutions. The course also covers the means of protecting design ideas.
Prerequisite(s): IDUS 314.
Attributes: Studio Elective Requirement

IDUS 421 Studio IV: Design for Futures (5 Credits)
In this course, students will explore the intersection of design, technology, and society to create forward-thinking product systems that respond to the ever-evolving needs of tomorrow. This course empowers students to harness emerging technologies and anticipate societal shifts, enabling them to craft solutions that are not only innovative but also socially and environmentally responsible. Students will gain critical leadership skills, preparing them to guide design teams in navigating complex challenges and delivering impactful products. Through collaborative, multidisciplinary projects, participants will integrate insights from diverse fields—such as engineering, user experience, and sustainability—to create designs that have long-lasting relevance in a rapidly changing world. By the end of the course, students will be prepared to lead transformative design initiatives that improve lives and shape the future of technology and society.
Prerequisite(s): IDUS 321 or IDUS 319; Liability waiver is required.
Attributes: Business-focused elective; Studio Elective Requirement

IDUS 471 Integrated Studio I: Inquiry and Product Intention (5 Credits)
The course focuses on the early stages of a complex and rigorous design process, guiding students from design inquiry to the formulation of a product intention. Through the exploration of significant and systemic issues, students will select a topic of their choice and embark on a comprehensive investigation. By applying research methods, critical thinking, and design tools, they will define a clear design challenge and develop an impactful design concept. This course lays the groundwork for future phases of a robust, on-going project, encouraging students to think deeply about the broader implications of their designs.
Prerequisite(s): IDUS 421; PRO 580 or CLC 580; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 479 Undergraduate Internship (5 Credits)
Internships offer students valuable opportunities to work in a professional environment and gain firsthand experience to help them prepare for careers. In an approved internship setting, a student typically spends one quarter working with an on-site professional supervisor and a faculty internship supervisor to achieve specific goals and objectives related to the program of study.

IDUS 491 Integrated Studio II: Implementation and Impact Making (5 Credits)
The course guides students through the crucial phases from design development to delivery, building upon the intentions established in previous courses. Students will refine and elevate their projects through vigorous visualization of ideas, strategic material and process selection, and the formulation of innovative business plans. Emphasizing concept validation and the fabrication of gallery-quality models, this course empowers students to transform their design intentions into impactful, market-ready solutions. Through iterative development and critical feedback, students will seamlessly integrate creative design with practical implementation strategies to deliver a compelling final product.
Prerequisite(s): IDUS 471; Liability waiver is required.
Attributes: Business-focused elective; Studio Elective Requirement

IDUS 501 Design in Context (5 Credits)
The ability to apply appropriate design techniques is vital in professional practice. This course provides the essential skills and tools to develop and visualize concepts and ideas in both two and three dimensions. This course provides students with a range of design challenges that enable them to prepare and present comprehensive solutions.
Attributes: Studio Elective Requirement

IDUS 509 Modeling: Physical to Rapid Prototyping (5 Credits)
This course provides an introduction to the basic and intermediate skills tools needed to develop and visualize concepts and ideas in both two and three dimensions. Students learn the primary methods for digital fabrication and file preparation, including CNC rapid prototyping, laser cutting, and 3D printing. This course provides students with a range of physical and digital design challenges that enable them to prepare and present comprehensive solutions.
Prerequisite(s): Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 701 Design Colloquium: Exploring Design Discourses (5 Credits)
This course offers an exhilarating exploration of the multifaceted world of design, offering a unique opportunity to engage with renowned faculty and professionals from various disciplines. Through thought-provoking lectures, interactive discussions, and hands-on activities, students explore the latest methodologies, emerging trends, and cutting-edge approaches that shape the future of industrial design. Students expand their critical thinking, refine communication skills, and cultivate a nuanced understanding of complex design challenges while exploring their potential thesis topic areas. Prerequisite(s): None.

IDUS 713 Industrial Design Studio I: Discovery to Design Solutions (5 Credits)
Students research and assimilate the design needs of a client, becoming skilled at placing their own designs within those parameters. They formulate concept proposals that make a desirable future possible and lead to new design directions. Design concepts are implemented through the creation of an innovative range of products that address the client's design needs and wants, both recognized and unrealized.
Prerequisite(s): Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 718 Industrial Design Studio II: Delivering the Design Solution (5 Credits)
Students apply advanced design methodology and management techniques by designing two products simultaneously. Students must consider not only the key components in the current designs, but must also propose future improvements based on possible technological advances. Students research technical feasibility and user requirements, as well as constructing prototypes, models and components to test the manufacturability or functionality of their proposals.
Prerequisite(s): (SDES 704 or SBIZ 704) and IDUS 713; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 723 Digital 3D Modeling and Rendering (5 Credits)
This course addresses industry interest in product simulation using high-end, 3D computer software. The course explores product modeling and assembling simulation and analyzes their application to the design process. Computer graphics are used as a communication tool for newly developed products.
Attributes: Studio Elective Requirement

IDUS 733 Entrepreneurship for Designers (5 Credits)
Students learn the principles of leadership and project planning critical to forming a profitable, successful new business based on an innovative concept. Business plan development is discussed, as well as core financial business strategies toward the end of achieving innovation in the marketplace.
Prerequisite(s): FASH 716; FIBR 745; FIBR 719; FURN 713; IDUS 713 or PRDS 713; Liability waiver is required.

IDUS 748 Industrial Design M.A. Final Project (5 Credits)
In this final studio, M.A. students apply all their skills to develop a product concept that addresses a unique set of needs through an understanding of the consumer and the market. With the collaboration of the supervising professor, students must demonstrate command of all aspects of the design process, from the application of original research findings to the creation of a marketing and production strategy for a product of their choosing.
Prerequisite(s): (IDUS 718 or PRDS 716) and minimum score of 5 in 'Graduate Prerequisite Test'; Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 751 Graduate Seminar on Research and Thesis Development (5 Credits)
Students acquire the essential skills to craft distinctive frameworks and methodologies for conducting, analyzing, and synthesizing impactful design research. Through structured discussions, persuasive presentations, and meticulous documentation, student fine-tune their understanding of theories and models central to design thinking and innovation. Students explore practical applications of these concepts across diverse domains such as design management, critical review, education, and public service. As a culmination of their efforts, students create a compelling thesis prospectus and professionally present their synthesized research findings and insights.
Prerequisite(s): (IDUS 718 or PRDS 716); Liability waiver is required.

IDUS 755 Thesis Development I: Investigation and Argumentation (5 Credits)
Building upon preliminary research, students leverage their thesis prospectus to delve deeper into their chosen thesis topic area. Students augment their investigation to substantiate the significance and potential impacts of their thesis. Ultimately, students garner a nuanced understanding of their chosen subject matter that facilitates the conceptual development crucial for the subsequent realization of the thesis projects.
Prerequisite(s): (IDUS 763 or IDUS 751).
Attributes: Studio Elective Requirement

IDUS 765 Thesis Development II: Synthesis and Application (5 Credits)
Expanding on research and design concepts initiated in past courses, students progress to the synthesis and application of their thesis project . Students meticulously refine their work, incorporating innovative technologies and materials. In this course, students investigate and apply critical aspects such as concept validation, advanced design methodologies, and effective project management, leading to visionary concepts to execution. Before progressing to the final thesis experience, students complete thorough documentation, utilizing design validation processes to ensure a robust and well-supported final presentation.
Prerequisite(s): (IDUS 755; IDUS 740 or PRDS 788); Liability waiver is required.
Attributes: Studio Elective Requirement

IDUS 770 Professional Practices in Industrial Design (5 Credits)
This course serves as a forum to discuss and prepare for the concerns of the professional world. Emphasis is placed on budgeting skills, portfolio preparation, presentation refinement and professional practices, including ethical issues related to the profession.
Prerequisite(s): (IDUS 713 or DMGT 706).
Attributes: Studio Elective Requirement

IDUS 779F Graduate Field Internship (5 Credits)
Students in this course undertake a field assignment under the supervision of a faculty member.

IDUS 779T Graduate Teaching Internship (5 Credits)
Students in this course undertake a teaching assignment under the supervision of a faculty member.

IDUS 790 Industrial Design M.F.A. Thesis (5 Credits)
All industrial design M.F.A. students are required to prepare an original thesis that researches an area of their particular interest. The thesis culminates in a written submission, in conjunction with a conclusive exhibition of research as applied to a specified product design.
Prerequisite(s): (IDUS 765; IDUS 745 or PRDS 789) and minimum score of 6 in 'Graduate Prerequisite Test'.