INDUSTRIAL DESIGN (ID)

ID 1011. Industrial Design Fundamentals 1. 2 Credit Hours.
Theory and practice in Industrial Design including an introduction to process, methodology, ergonomics, research tools and user research. Focus is on fundamental design principles.

ID 1012. Industrial Design Fundamentals 2. 2 Credit Hours.
Theory and practice in Industrial Design including an introduction to process, methodology, ergonomics, research tools and user research. Focus is on CAD and digital prototyping.

ID 1101. Introduction to Industrial Design 1. 1 Credit Hour.
Introduction to Industrial Design – a survey of evolving diverse career options and the designer's impact on society. Emphasis on traditional product design, research, and strategy.

ID 1102. Introduction to Industrial Design 2. 1 Credit Hour.
Introduction to Industrial Design – a survey of evolving diverse career options and the designer's impact on society. Emphasis is on user experience and interaction design.

ID 1401. Introduction to Graphic Communications 1. 1 Credit Hour.
Introduction to graphic design, composition, layout, color, typography, photography, social media & videography. Emphasis of this first course is on development of basic visual literacies.

ID 1402. Introduction to Graphic Communications 2. 1 Credit Hour.
Introduction to graphic design, composition, layout, color, typography, photography, social media & videography. This second course in the sequence will emphasize digital skill development.

ID 1418. Introduction to Sketching and Modeling 1. 1 Credit Hour.
Introduction to basic visual representation techniques that empower designers of products, services and systems through sketching, model making, computer-assisted drawing, rapid prototyping, and other methods.

ID 1419. Introduction to Sketching and Modeling 2. 1 Credit Hour.
Introduction to intermediate visual representation techniques that empower designers of products, services and systems through sketching, model making, computer-assisted drawing, rapid prototyping, and other methods.

ID 1XXX. Industrial Dsgn Elective. 1-21 Credit Hours.

ID 2011. Introductory Design I. 4 Credit Hours.
Foundation course in visual communications theory and practice, continuing the development of two-dimensional visual literacy. Emphasis on both analog and digital media.

ID 2012. Introductory Design II. 4 Credit Hours.
Foundation course in form giving and representing, continuing the development of three-dimensional visual literacy. Emphasis on visual relationships between form and image.

ID 2021. Industrial Design Studio 1. 4 Credit Hours.
This course provides an introduction to the design process on visual principles and presentation techniques with a focus on sketching and modeling techniques related to 3D form.

ID 2022. Industrial Design Studio 2. 4 Credit Hours.
This course applies more structured design methods to research and exploration of product form and function and introduces concepts of universal design and user centered design.

ID 2023. Industrial Design Studio 1. 3 Credit Hours.
This course applied structured design methods to research and exploration of product form and function and introduces concepts of user centered design.

ID 2024. Industrial Design Studio 2. 3 Credit Hours.
This course applies structured user-centered design methods to research and exploration of product design and function, and introduces concepts of universal design.

ID 2101. Digital Design Methods. 3 Credit Hours.
This course introduces the basics of product design in the CAD environment. Stuents design a product, apply 3D scanning, produce an animation and 3D print.

ID 2102. 3D Modeling. 2 Credit Hours.
This course introduces 3D modeling methods for solid and surface modeling in CAD software. Students create multi-component assembly drawings and explore rendering techniques for product design.

ID 2201. Sustainable Issues for Design. 3 Credit Hours.
Introduction to the broad environmental issues that face humankind as a participant in the biosphere.

ID 2202. History of Modern Industrial Design. 3 Credit Hours.
History and development of industrial design from the beginning of the Industrial Revolution to the present.

ID 2241. History of Art 1. 3 Credit Hours.
This course surveys art from Prehistory through the Renaissance and is organized around stylistic periods that are arranged chronologically. Classes will consist of lectures with slides that focus on these stylistic periods.

ID 2242. History of Art 2. 3 Credit Hours.
This course surveys the major artistic movements and aesthetics of the 17th, 18th, 19th, 20th, and early 21st centuries in painting, sculpture and architecture.

ID 2320. Human Factors in Design. 3 Credit Hours.
This course examines the theory of Human Factors to provide a working knowledge of the physical and cognitive attributes of people that designers must accomodate.

ID 2325. User Centered Design Methods. 3 Credit Hours.
This course introduces students to user-centric design methods used to identify, understand, assess and prioritize the neuroscience factors and perceptions that contribute to more effective product design and human-centered design solutions.

ID 2401. Visual Design Thinking. 3 Credit Hours.
Introduction to techniques to help designers build a vocabulary to support effective visual communication including fundamentals of layout, sketching, rendering, schematics, information graphics & storyboarding.

ID 2510. Introduction to Smart Product Design. 3 Credit Hours.
This course provides an introduction to smart product design including the basics of sensor technologies, electronics and programming required to produce working product concept prototypes.

ID 2698. Undergraduate Research Assistantship. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.

ID 2699. Undergraduate Research. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.

ID 2XXX. Industrial Dsgn Elective. 1-21 Credit Hours.

ID 3011. Intermediate Design I. 5 Credit Hours.
The systematic design process as applied to industrial design and packaging problems.

ID 3012. Intermediate Design II. 5 Credit Hours.
Various dimensions of human factors applied to design, including: aging, disability, normal age change, childhood and adult anthropometrics, and human capability.

ID 3031. Health Design Studio 1. 4 Credit Hours.
The application of systematic user-centered design methods and research to projects focused on the design development of new and/or improved health-related products with an emphasis on inclusive design.

ID 3032. Health Design Studio 2. 4 Credit Hours.
The application of systematic user-centered design methods and research to projects focused on the design development of new and/or improved health-related products with an emphasis on products and product systems.

ID 3041. Product Development Studio 1. 4 Credit Hours.
The application of systematic user-centered design methods and research to projects focused on the use of parametric design and CNC capabilities in the design development of products, services & systems.

ID 3042. Product Development Studio 2. 4 Credit Hours.
The application of systematic user-centered design methods to projects focused on the design development of 'real-world' products, services, interfaces & systems in collaboration with external sponsors.

ID 3051. Interactive Product Design Studio 1. 4 Credit Hours.
The application of systematic product design and research methods to projects focused on new applications of sensor-based technologies to the creation of interactions, products and interfaces with an emphasis on the importance of user-centered design.

ID 3052. Interactive Product Design Studio 2. 4 Credit Hours.
The application of systematic user-centered design methods to projects focused on new applications of sensor-based technologies with an emphasis on interactive environments, interfaces, navigation and mobility.

ID 3103. Industrial Design Computing I. 3 Credit Hours.
Introduction to 2-D computer drawing systems.

ID 3104. Industrial Design Computing II. 3 Credit Hours.
Introduction to 3-D modeling systems.

ID 3201. Design & Community: The Social and Environmental Impact of Design. 3 Credit Hours.
Students explore socially and environmentally responsible industrial design practices at home and abroad, and partner with local organizations to develop community-based design projects.

ID 3301. Materials I: Renewables. 3 Credit Hours.
This course examines the characteristics, production technologies, histories, and environmental impacts of nine categories of renewable materials familiar to product and product system design.

ID 3302. Materials and Processes II: Nonrenewables. 3 Credit Hours.
Examination of characteristics, production technologies, histories, and environmental impacts of nonrenewable materials used in product design.

ID 3320. Design Methods: User Centered Design. 3 Credit Hours.
This course introduces students to current user-centric design methods used to identify, understand, assess and prioritize the factors and perceptions that contribute to more effective product design and human-centered design solutions.

ID 3510. Introduction to Interactive Product Design. 3 Credit Hours.
This course provides an introduction to interactive product design including the basics of sensor technologies, electronics and programming required to produce working product concept prototypes.

ID 3520. Tangible Interaction. 3 Credit Hours.
This course addresses the design process related to interactive environments. Projects will emphasize the inclusion of ubiquitous and emerging interactive technologies.

ID 3803. Special Topics. 3 Credit Hours.
Topics of current interest in industrial design.

ID 3811. Special Topics. 1 Credit Hour.

ID 3813. Special Topics. 3 Credit Hours.
Topics of current interest in Industrial Design.

ID 3814. Special Topics. 4 Credit Hours.
Special Topics in Industrial Design (lecture and lab).

ID 3824. Special Topics. 4 Credit Hours.

ID 3901. Special Problems. 1-21 Credit Hours.

ID 3902. Special Problems. 1-21 Credit Hours.

ID 3XXX. Industrial Dsgn Elective. 1-21 Credit Hours.

ID 4011. Advanced Design I. 5 Credit Hours.
Application of the design process to advanced multidisciplinary design problems. Experience in solving real design problems from areas such as consumer products and equipment, transportation and equipment.

ID 4012. Advanced Design II. 5 Credit Hours.
Capstone industrial design project of student's own choosing, with consent of instructor, to refine problem-solving and design ability in preparation for professional practice.

ID 4061. ID Capstone Design Studio 1. 4 Credit Hours.
Comprehensive team-based projects incorporating an iterative approach to design development of products, & systems with emphasis on integration of research, user-centered design, prototyping, usability and testing.

ID 4062. ID Capstone Design Studio 2. 4 Credit Hours.
Comprehensive team-based projects incorporating an iterative approach to design development of products, & systems with emphasis on integration of research, user-centered design, prototyping, usability and testing.

ID 4071. Invention Studio 1. 4 Credit Hours.
An interdisciplinary team-based approach to integrate industrial design and engineering competencies in user-centered design development of products and systems with emphasis on corporate-sponsored projects.

ID 4072. Invention Studio 2. 4 Credit Hours.
Comprehensive projects incorporating an iterative approach to user-centered design development of products, systems & services with emphasis on invention, innovation and entrepreneurship.

ID 4081. ID/ME Collaborative Design Studio 1. 4 Credit Hours.
An interdisciplinary team-based approach to integrate industrial design and engineering competencies in user-centered design development of products and systems with emphasis on corporate-sponsored projects.

ID 4082. ID/ME Collaborative Design Studio 2. 4 Credit Hours.
An interdisciplinary team-based approach to integrate industrial design and engineering competencies in user-centered design development of products and systems with emphasis on humanitarian projects.

ID 4103. Alias Studio I. 3 Credit Hours.
Introduction to modeling, rendering, and animation with Alias Studio software.

ID 4104. Alias Studio II. 3 Credit Hours.
Introduction to product animation using Alias Studio software.

ID 4105. Advanced Modeling Concepts for Creating Complex Forms. 3 Credit Hours.
The Advance Modeling Concepts Course explores concepts, tools and theories used to model and validate complex forms encountered in the product design process.

ID 4106. Parametric Product Modeling. 3 Credit Hours.
This course focuses on advanced digital methods in product modeling for visual analysis, flexible design approaches and digital fabrication methods.

ID 4201. Design/Research Methods. 3 Credit Hours.
Research methods applicable to industrial design including task definition, information gathering, and analysis.

ID 4202. Professional Practice and Preparation. 3 Credit Hours.
Principles of consulting and corporate industrial design including preparation of the professional portfolio.

ID 4203. French Society and Culture. 3 Credit Hours.
Studies in French society and culture.

ID 4204. Theorizing Design. 3 Credit Hours.
Introduction to what designers do and how they undertake their tasks; examples will come from a variety of design disciplines.

ID 4205. French Design and Culture. 3 Credit Hours.
Studies in French design and culture.

ID 4206. Culture of Objects: A Seminar on the Design and Culture of Objects. 3 Credit Hours.
This seminar surveys the theories and methodologies within the field of industrial design that locate meaning in the designed object as derived from culture.

ID 4210. Introduction to Universal Design in the Built Environment. 3 Credit Hours.
This course provides an introduction to universal design focusing on the implications of ability on the usability of places, products, and systems for all individuals.

ID 4320. Prototyping Interaction: Designing for Experience. 3 Credit Hours.
This course exposes students to a range of practical methods for research and design exploration to support the design development of interactive products and technologies.

ID 4418. Design Sketching. 3 Credit Hours.
This course addresses drawing and visualization techniques necessary for design thinking and development and introduces methods and processes to formulate and present visual information.

ID 4450. Developing a Professional Design Portfolio. 3 Credit Hours.
The portfolio development course provides students with a structured approach to preparing a professional visual record of their work in print and digital formats.

ID 4510. Wearable Product Design. 3 Credit Hours.
Wearable Product Design explores techniques in producing designs and prototypes for on-body interactions, and general textile knowledge for making effective wearable products.

ID 4698. Undergraduate Research Assistantship. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.

ID 4699. Undergraduate Research. 1-12 Credit Hours.
Independent research conducted under the guidance of a faculty member.

ID 4803. Special Topics: Furniture. 3 Credit Hours.
Special topics in furniture design not covered in the professional curriculum.

ID 4813. Special Topics: Sustainability. 3 Credit Hours.
Special topics in sustainability not included in the professional curriculum.

ID 4823. Special Topics: Information Technology. 3 Credit Hours.
Special topics in information technology not included in the professional curriculum.

ID 4824. Special Topics. 4 Credit Hours.

ID 4833. Special Topics: Collaborative. 3 Credit Hours.
Application of the design process to advanced multidisciplinary problems by a team. Projects from a range of interest areas: consumer, industrial products, transportation, furniture.

ID 4843. Special Topics: History and Theory. 3 Credit Hours.
Special topics in history and theory not included in the professional curriculum.

ID 4900. Special Problems: Visual Communications. 1-21 Credit Hours.
Special problems in communication not covered in the professional curriculum.

ID 4901. Special Problems: Mentor Program. 1-21 Credit Hours.
Special problems in teaching pedagogy; mentoring by senior faculty in basic and intermediate design courses.

ID 4902. Special Problems: Mentor Program. 1-21 Credit Hours.
Special problems in teaching pedagogy; mentoring by senior faculty in basic and intermediate design courses.

ID 4903. Special Problems: Research. 1-21 Credit Hours.
Special research topics for advanced students not covered in the professional curriculum.

ID 4904. Special Problems: Research. 1-21 Credit Hours.
Special research topics for advanced students not covered in the professional curriculum.

ID 4XXX. Industrial Dsgn Elective. 1-21 Credit Hours.