

# DESIGN (DSGN)

## **DSGN 101 Introduction to Product Design (4 Credits)**

Explores the dynamic field of product design, focusing on essential elements such as design thinking, sustainable and universal design practices, and the latest in manufacturing technologies. Engages students in a thorough study of both successful and less successful products, gaining a deep understanding of the key factors that influence product design outcomes. Asks students to apply their creativity in conjunction with practical skills to conceive and pitch innovative product ideas. Emphasizes a blend of theoretical knowledge and practical application. Repeatable for credit.

## **DSGN 103 User Experience (UX) Research Methodologies (4 Credits)**

**Recommended to be taken with:** DSGN 104.

Introduces students to methods for understanding their user in order to guide their design decisions. Emphasizes how to conduct user research using different research methodologies, the design of studies and interviews, and how to analyze research and present research findings. Teaches the fundamentals of user research methodologies.

## **DSGN 104 UX Design Principles (4 Credits)**

**Recommended to be taken with:** DSGN 103.

Introduces the fundamental design principles of User Experience (UX). Emphasizes how to analyze and apply principles to UX design. Builds on concepts from UX Research Methods.

## **DSGN 130 Product Design Fundamentals (3 Credits)**

**Recommended to be taken with:** DSGN 101.

Preparation for safely operating and maintaining a product workshop. Provides hands-on training setting up efficient production workflow plans for product fabrication. Develops skills to design and fabricate products, branding, packaging, and presentations. Repeatable for credit.

## **DSGN 140 3D Modeling I (4 Credits)**

Surveys the essential tools and techniques needed for creating professional 3D models, technical drawings, product renderings, and 3D prints using industry-standard computer-aided design (CAD) software. Offers a comprehensive insight into the 3D modeling process, ensuring that students acquire skills crucial for effective communication in the global design industry. Emphasizes practical application of creative ideas into tangible products. Repeatable for credit.

## **DSGN 150 Design for Production (3 Credits)**

**Prerequisites:** DSGN 130 and DSGN 140.

Provides the tools and techniques to generate computer-aided manufacturing (CAM) files for production. Preparation for analyzing design and material data to determine machine tooling and machining speeds and feeds. Provides hands-on training designing for production and safely operating CNC routers, laser engravers, and 3D printers. Repeatable for credit.

## **DSGN 180 Co-op Work Experience Design (1-4 Credits)**

**Prerequisites:** Instructor approval.

Provides experience in which students apply previous classroom learning in an occupational setting for design. Credits depend on the number of hours worked. P/NP grading. Repeatable for credit.

## **DSGN 197PD Portfolio Development: Product Design (1 Credit)**

**Prerequisites:** DSGN 101; DSGN 130; DSGN 140 and DSGN 150.

Develop a product design portfolio. Create a resume, website, and branded materials. Learn how to search for job opportunities, apply for grants and scholarships, and interview for jobs. Review career pathways, as well as art school and university requirements. Developed body of design work suggested for the course. Repeatable for credit.

## **DSGN 199 Selected Topics: Design (1-4 Credits)**

Provides a learning experience in Design not currently available; this course is in development to be proposed as a permanent course. Repeatable for credit.

## **DSGN 201 Professional Practices & Portfolio Development (4 Credits)**

Covers the professional aspects of design, including client communication, project management, ethical practices, and effective collaboration. Emphasizes the development of a professional portfolio that showcases students' design abilities and projects, as well as how to present their work in both digital and physical formats. Designed to prepare students for the professional world through a combination of theoretical understanding and practical application of skills and knowledge. Repeatable for credit.

## **DSGN 202 User Interface Design (UI) (3 Credits)**

**Prerequisites:** ART 141 and DSGN 104.

**Recommended to be taken with:** DSGN 203.

Introduces professional techniques for generating UI designs and workflows for a design. Covers visual and workflow problem solving and the process of creating component libraries, screen layouts, and using industry standard software to create a design. Repeatable for credit.

## **DSGN 203 Usability Testing (4 Credits)**

**Prerequisites:** DSGN 103 and DSGN 104.

**Prerequisites with concurrency:** DSGN 202.

Introduces the concept of usability testing for UI design. Emphasizes how to plan, create, and complete a usability study. Repeatable for credit.

## **DSGN 230 Product Design Studio I (4 Credits)**

**Prerequisites:** DSGN 140.

Provides an immersive learning experience that emphasizes digital design with advanced tools for manufacturing and creative exploration and that is structured around core concepts such as design thinking, sustainable and inclusive design practices, and the understanding of current manufacturing technologies. Covers the multifaceted factors that drive product design, from initial idea generation to conceptual realization and encourages the fusion of creativity with practical design skills. Repeatable for credit.

## **DSGN 240 3D Modeling II (4 Credits)**

**Prerequisites:** DSGN 140.

Introduces intermediate knowledge and skills in creating complex and sophisticated 3D designs. Uses computer-aided design (CAD) software to focus on advanced techniques in digital design, testing, rendering, and animation. Focuses on the development of CAD models from 3D scans for 3D printing. Emphasizes 3D modeling skills and how to apply those skills to real-world challenges in the design industry. Repeatable for credit.

## **DSGN 250 Design for Robotic Production (3 Credits)**

**Prerequisites:** DSGN 130 and DSGN 140.

Provides the tools and techniques to design for robotic production. Preparation for analyzing design and material data to determine machine tooling and machining speeds and feeds. Provides hands-on training for safely operating milling and 3D printing robotic systems. Repeatable for credit.

## **DSGN 257 Metal Arts: Production (3 Credits)**

**Prerequisites:** ART 158B1.

Introduces tools and techniques for creating multiple metal objects using production processes. Repeatable for credit.

**DSGN 260 Product Design Studio II (4 Credits)**

**Prerequisites:** DSGN 230.

Continues the exploration of product design begun in Product Design Studio I by focusing on more complex aspects of designing and digitally developing products, moving from idea through to conceptual realization. Develops students' understanding of the nuanced factors that influence product design, sharpening their skills in both conceptualization and digital execution, and also encourages a deeper integration of creativity with sophisticated design skills that blend advanced theoretical knowledge with digital design practice. Repeatable for credit.

**DSGN 296PD Creative Team: Product Design (1 Credit)**

**Prerequisites:** Instructor Approval Required.

**Recommended preparation:** DSGN 130 and DSGN 140 .

Provides experience for students to apply previous classroom learning as a creative team to develop product designs for various assigned professional work. P/NP grading. Repeatable for credit.

**DSGN 297PD Capstone: Product Design (4 Credits)**

**Prerequisites:** DSGN 140.

Offers a culminating learning experience for students that blends advanced, individualized development with practical application of design skills and knowledge. Requires the design and development of a unique product or product line, encompassing all stages from initial concept to manufacturing readiness and includes in-depth market research, concept development, digital product design and evolution, brand development, packaging design, and preparation for outsourced manufacturing. Synthesizes the entire product design process to allow students to showcase their accumulated skills and creativity and prepare them for the professional world of product design. Repeatable for credit.

**DSGN 297UX Capstone Project: UX/UI (3 Credits)**

**Prerequisites:** DSGN 203.

Provides advanced, individualized development in UX design. Develop two new features to add to the project started in DSGN 203. Provides opportunity for creating an app with multiple features, iterative development, and final presentation. Repeatable for credit.

**DSGN 298 Independent Study: Design (1-6 Credits)**

**Prerequisites:** Instructor approval required.

**Recommended preparation:** Prior coursework in the discipline.

Individualized, advanced study in product design to focus on outcomes not addressed in existing courses or of special interest to a student. P/ NP grading. Repeatable for credit.

**DSGN 299 Selected Topics: Design (1-4 Credits)**

Provides a learning experience in Design not currently available; this course is in development to be proposed as a permanent course. Repeatable for credit.