

PRODUCT DESIGN (PRDN), BACHELOR OF SCIENCE

OVERVIEW

At Dunwoody College of Technology, the Product Design bachelor's degree is a visual arts major that focuses on blending artistic skill with product development for commercial markets. Through hands-on projects, students develop the skills to conceptualize, design, develop, and iterate products with an end user in mind. Students of this four-year program graduate ready to work in advertising, graphic design, and product development in industries that manufacture all categories of commercial products.

During the program, students benefit from cross-departmental learning that allows them to experience product design from initial idea all the way to launch. Focus is placed not only on the aesthetic properties of a product, but also on how it functions, is manufactured, and provides a valuable experience to users. Students learn the technical skills needed for product design, including industry standard software such as AutoCAD, SolidWorks, and Adobe Creative Cloud. They also gain a deep understanding of the design process and learn to collaborate with others throughout that process. An emphasis is placed on sustainable design along with utilizing standards that protect the health, safety, and well-being of stakeholders.

Coursework includes such topics as Engineering Drawings, Product Design, Design for Manufacturability, Packaging Design, Lighting Design, Furniture Design, 2D and 3D Design.

Hawk Core Curriculum both supports the students' technical direction and enhances their oral and written communication skills, fundamental math skills, and critical thinking ability. The course of study culminates in an industry internship or capstone project where students gain on-the-job experience.

Length of Program: 4 years (8 semesters)

Classes Offered: Day

Available Starts: Fall Semester

PROGRAM OUTCOMES

By the end of this program, students will be able to:

- Collaborate on design solutions.
- Demonstrate professionalism, ethics, and leadership.
- Constructively review and critique and welcome feedback.
- Communicate visually and verbally with a variety of stakeholders.
- Apply knowledge of human experience and global context to design solutions.
- Apply the design process.
- Apply the principles and elements of design.
- Documentation and integration of design solutions.
- Utilize standards that protect the health, safety, and well-being of stakeholders.
- Demonstrate knowledge and responsibility for sustainable design.
- Demonstrate technical knowledge.

DEGREE REQUIREMENTS

Code	Title	Credits
General Requirements		
ARTS1250	Design History	3
ARTS2200	Global Design History	3
Communications Elective		3
Math/Natural Sciences Elective		3
Social Sciences Elective		3
General Electives		15
Technical Requirements		
ENGR4110	Engineering Ethics	2
MDES1110	Engineering Drawings with SolidWorks	4
MDES2110	Product Design Lab	5
MDES2120	Product Design Theory	4
MDES2130	Advanced SolidWorks	4
MENG1210	Machining for Engineers Lab	2
MENG1220	Machining for Engineers	2
MENG3111	Design for Manufacturability with Lab	3
PRDN1014	Industry and Profession	1
PRDN3011	Handheld Studio	5
PRDN4011	Wearable Studio	5
PRDN4021	Capstone Studio	5
SODN1011	Foundation Studio	5
SODN1012	Design Representation	3
SODN1022	Packaging Design	3
SODN1023	Design Principles	3
SODN1502	3D Concepts	1
SODN2022	Lighting Design	3
SODN2023	Portfolio Design	3
SODN3012	Sustainable Design	3
SODN3014	Surface Design	3
SODN3015	Design Communication	1
SODN3021	Branding Studio	5
SODN3022	Furniture Design	3
SODN3023	Universal Design	3
SODN3024	2D Design	1
SODN4012	Design Research	3
SODN4013	Designing Careers	3
SODN4014	3D Design	1
SODN4024	4D Design	1
Total Credits		120

COURSES

Descriptions

ARTS1250 | Design History | Lecture (3 Credits)

Design has shaped human civilization for centuries, influencing everything from the tools we use to the ways we communicate and experience the world. This course surveys key design movements, cultural trends, and influential figures in graphic and object design, art, and architecture from the mid-nineteenth century to the present. You'll use language of design to place its historical context and to explore its ongoing influence in shaping the modern world.

General Education: Humanities

ARTS2200 | Global Design History | Lecture (3 Credits)

Design reflects the evolving intersection of global history and diverse cultures, particularly in spatial design fields such as architecture, interior design, landscape architecture, and urban planning. This course examines how these disciplines are reflective of past cultures and responsive to the present through social, political, and environmental influences using examples from across the globe. You'll decode the historical trajectories and illuminate the meanings in cultural influences that have shaped and are expressed in the world's built environments; influence design practice, theories, technologies; and create cultural meaning.

General Education: Humanities

MDES1110 | Engineering Drawings with SolidWorks | Lecture (4 Credits)

Creation of 3D solid models, assemblies and related engineering documentation using SolidWorks. Blueprint reading and application of ASME/ANSI standards to CAD drawings.

MDES2110 | Product Design Lab | Laboratory (5 Credits)

Introduction to product design methods and concepts; converting product ideas and requirements into working designs. Design balance and relation to concepts such as aesthetics, performance, ergonomics and manufacturability.

Prerequisite(s): MDES1210

Corequisite(s): MDES2120

MDES2120 | Product Design Theory | Lecture (4 Credits)

Integrate methods and concepts of product design to actual designs of simple products. Determine design parameters, develop product opinions, narrow the focus for balance, and document the final design.

Corequisite(s): MDES2110

MDES2130 | Advanced SolidWorks | Lecture (4 Credits)

Simulation (Finite Element Analysis) and advanced surface modeling techniques. Culminates in testing for CSWA certification.

Prerequisite(s): MDES1110

MENG1210 | Machining for Engineers Lab | Laboratory (2 Credits)

Employ metalworking techniques using typical shop equipment including mills, lathes, grinders, saws, and drills. Utilize hand tools to prep stock and finish edges.

Corequisite(s): MENG1220

MENG1220 | Machining for Engineers | Lecture (2 Credits)

Use theory and understanding of machining operations to plan work to create parts efficiently.

Prerequisite(s): MENG1110 Or MDES1110

Corequisite(s): MENG1210

MENG3111 | Design for Manufacturability with Lab | Lecture/Laboratory (3 Credits)

Introduction to common manufacturing processes, with emphasis on the principles of design for each process. Processes include: sheet metal forming, casting, welding, and plastic fabrication. Design and create parts using common manufacturing processes, such as casting, injection molding, and sheet metal forming processes.

Prerequisite(s): MENG1210 And MENG1220

PRDN1014 | Industry and Profession | Seminar (1 Credit)

Industry and Profession explores the history, structure, and organization of design practices. Discover and develop communication and collaborative skills along with an appreciation and understanding of the unique roles of design disciplines.

PRDN3011 | Handheld Studio | Lecture/Studio (5 Credits)

Handheld Studio examines the use, function, and mechanics of everyday objects and reimagines the user experience. Emphasis is placed on research, ideation, prototyping, ergonomics, and illustration. Explore responsive design solutions through the use of fabrication techniques, materials properties, manufacturing processes, sustainability, and marketability.

PRDN4011 | Wearable Studio | Lecture/Studio (5 Credits)

Wearable Studio analyzes human-centered constraints of comfort through the design of a wearable device. Emphasis is placed on researching how, where, and when the user will wear the product and the entirety of the user experience. Examine relationships with embedded technologies and the interaction between users, use of materials, and controls.

Prerequisite(s): SODN3021

PRDN4021 | Capstone Studio | Lecture/Studio (5 Credits)

Capstone Studio explores a self-directed, comprehensive design project supported by design research and cultural and social contexts. Emphasis is placed on individual design philosophy, process, learning, working, and thinking associated with academic work and practice. Demonstrate design skills that synthesize a comprehensive and professional understanding to solve design problems through exploration and iteration.

Prerequisite(s): PRDN4011 And SODN4015

SODN1011 | Foundation Studio | Lecture/Studio (5 Credits)

Foundation Studio explores design problems and solutions through the understanding of the design process. Emphasis is placed on design thinking, making, and technical, spatial and conceptual composition. Develop effective design solutions through the exploration of fundamental design principles and processes.

SODN1012 | Design Representation | Lecture (3 Credits)

Design Representation is an introduction to methods of visual graphics and the basic tools and skills needed to develop professional presentations. Develop an understanding of analog and digital tools, composition, visual narrative, and verbal and visual communication.

SODN1022 | Packaging Design | Lecture (3 Credits)

Packaging Design explores the creation and design of a product enclosure for the retail environment. Learning is focused on marketability, brand expression, structural application, materials, surface elements, and sustainability.

SODN1023 | Design Principles | Lecture (3 Credits)

Design Principles introduces the fundamental processes and concepts of design thinking and making used in the development of design projects. Explore 2D and 3D space through experimentation, hands-on projects, and iterative making to achieve design outcomes.

SODN1502 | 3D Concepts | Seminar (1 Credit)

Introduction to critical thinking methods as they relate to creative problem solving, using basic elements and principles of design. Explore the design process to create visual responses to abstract concepts.

SODN2022 | Lighting Design | Lecture (3 Credits)

Lighting Design explores the properties, aesthetic qualities, and technical considerations of artificial and natural light. Examine function, interaction, and lighting controls to enhance interior and exterior environments.

SODN2023 | Portfolio Design | Lecture (3 Credits)

Portfolio Design explores personal brand, visual identity, and professional portfolio through selfreflection, research, ideation, and assessment. Curate and compose current design work, focusing on selection, organization, and presentation for professional career goals.

Prerequisite(s): EGDN2011, Or IARC2011, Or MDES2120, Or ARCH2011

SODN3012 | Sustainable Design | Lecture (3 Credits)

Sustainable Design explores environmental factors and sustainable design strategies through the use of performance assessment tools and metrics. Learning focuses on material, product, and life-cycle with an emphasis on reducing environmental impact and maintaining healthy environments.

SODN3014 | Surface Design | Lecture (3 Credits)

Surface Design explores patterns, color enhancements, and visual problem-solving through traditional and digital techniques. Learning focuses on brand expression, marketability, and production techniques.

SODN3015 | Design Communication | Seminar (1 Credit)

Design Communication explores the skills and techniques of professional presentation and communication. Develop verbal and visual presentations that effectively describe design intent.

SODN3021 | Branding Studio | Lecture/Studio (5 Credits)

Branding Studio explores the communication of visual elements and brand strategy across a project experience. Emphasis is placed on typography, color, visual language, and brand expression. Explore brand through scale, material, technology, and user interaction.

Prerequisite(s): EGDN3011 Or PRDN3011

SODN3022 | Furniture Design | Lecture (3 Credits)

Furniture Design explores aesthetic, ergonomic, and functional issues related to the creation of custom furniture. Learning focuses on responsive design solutions through research, prototyping, and use of materials to develop a personal design approach to designing and making furniture.

SODN3023 | Universal Design | Lecture (3 Credits)

Universal Design explores the legal and ethical responsibility that designers have in the creation of furnishings, objects, spaces, and environments. Learning focuses on ergonomics, anthropometrics, social factors, standards, and regulations and how they impact life safety.

SODN3024 | 2D Design | Seminar (1 Credit)

2D Design explores geometry, form, and patterning through research and hands-on exploration. Discover and develop visual and verbal communication skills for describing 2D forms.

SODN4012 | Design Research | Lecture (3 Credits)

Design Research focuses on the tools, methods, and skills needed to develop and frame the Capstone Studio project. Learning focused on data collection, interpretation, analysis, and synthesis of a comprehensive design brief used to guide the Capstone Studio project through research.

SODN4013 | Designing Careers | Lecture (3 Credits)

Designing Careers prepares students to navigate the professional working environment upon graduation. Learning focuses on enhancing job readiness, career options, refining portfolio, professional communication, personal brand, and networking opportunities.

Prerequisite(s): ARCH4021, Or SODN3021, Or IARC3021

SODN4014 | 3D Design | Seminar (1 Credit)

3D Design explores form through material exploration and experimentation. Develop design solutions using analog and digital tools, composition, prototyping, and visual communication.

SODN4024 | 4D Design | Seminar (1 Credit)

4D Design explores the language of design, user experience, and interaction with motion, sounds, and interfaces. Develop design solutions that are influenced by 2D and 3D principles.