

ART & DESIGN/PRODUCT DESIGN (PRDN)

PRDN 100 - Design Sketching I **3 Credits**

Prerequisite(s): Product Design majors only or departmental approval. Students gain an understanding of the relevance and role of effective sketching and drawing techniques, as essential research and communication tools for industrial designers. The course work addresses 2D geometry and fundamental 3D, descriptive geometry. The course focuses on developing students' free hand sketching abilities, necessary to accurately communicate design ideas in conceptual, aesthetic and technical terms as it places a role in the design development process. 2 hours lecture, 4 hours studio. Previous course ARID 100 effective through Spring 2017.

PRDN 101 - Design Rendering: Concept Visualization **3 Credits**

Prerequisite(s): PRDN 100; Product Design majors only. Building on skills gained in PRDN 100 the course concentrates on rendering techniques developed and enhanced presentation techniques using mixed media applications. The course material extends students' technical knowledge and skill level in creating effective presentations employing color enhanced persuasive drawings in design concept and idea development. Logic of effective presentation techniques appropriate for product designers is part of the coursework. 2 hours lecture, 4 hours studio. Previous course ARID 101 effective through Spring 2017.

PRDN 111 - Model Making and Prototyping **3 Credits**

Prerequisite(s): PRDN 100; Product Design majors only. Corequisite(s): PRDN 101. Students will learn the role of model making and prototyping in the design process. The focus of the course is the construction of scale models as a means of visualizing design ideas. Students will learn the importance of making various study and presentation models and use appropriate techniques and materials relevant in each stage of the design process. Course assignments challenge students to focus on detail and workmanship. 2 hours lecture, 4 hours studio. Previous course ARID 111 effective through Spring 2017.

PRDN 120 - Product Design Form Language **3 Credits**

Prerequisite(s): PRDN 100 and PRDN 101 and PRDN 111; Product Design majors only. Corequisite(s): PRDN 201 and PRDN 202. Students will study the concept of form and function in relation to aesthetics, user perception and cognitive principles. The importance of cultural and social behavior factors that influence product perception and design development is emphasized. Students will gain an understanding of the rules of conscientious and responsible form development as it applies to theory of "user centered design" and will be able to differentiate designs of functional and emotional nature. 2 hours lecture, 4 hours studio. Previous course ARID 120 effective through Spring 2017.

PRDN 201 - Digital Sketching # Sketchbook Pro **3 Credits**

Prerequisite(s): PRDN 100 and PRDN 101 and PRDN 111; Product Design majors only. Corequisite(s): PRDN 120 and PRDN 220. The course builds on the knowledge gained in PRDN 100 and PRDN 101 with the focus of developing digitally created sketches, drawings, presentations for the purpose of communicating the development of design concepts and supporting research in a coherent form, using industry standard Sketchbook Pro. 2 hours lecture, 4 hours studio. Previous course ARID 201 effective through Spring 2017.

PRDN 202 - Digital Rendering: Adobe CS **3 Credits**

Prerequisite(s): ARFD 100, ARFD 101, ARFD 106, PRDN 100, PRDN 101, PRDN 111 and PRDN 120; Product Design majors only. Building on skills gained in previous coursework, the course concentrates on digitally developed and enhanced 2D presentation techniques using industry standard computer applications. The course material extends students' technical knowledge and skill level in creating effective presentations employing digitally enhanced sketches and computer generated drawings in design concept and idea development. Logic of effective presentation techniques appropriate for product designers is part of the coursework. 2 hours lecture, 4 hours studio. Previous course ARID 202 effective through Spring 2017.

PRDN 210 - Manufacturing Technology **3 Credits**

Prerequisite(s): PRDN 100 and PRDN 101 and PRDN 111 and PRDN 120; Product Design majors only. Corequisite(s): PRDN 211 and PRDN 221. The primary objective of this course is to equip students with the theories of traditional manufacturing production technology. Various methods for producing mass manufactured consumer products are analyzed, together with examining material properties best suited for a particular design. Students will learn about the most common material families used in Product Design and the manufacturing processes applied to satisfy production feasibility and optimal design outcome. Laboratory activities and project assignments may be in conjunction with PRDN 211 and PRDN 221. 2 hours lecture, 4 hours studio. Previous course ARID 210 effective through Spring 2017.

PRDN 220 - Digital Modeling: 3D CAD I **3 Credits**

Prerequisite(s): PRDN 100 and PRDN 101 and PRDN 111; Product Design majors only. Corequisite(s): PRDN 120 and PRDN 201. The focus of this course is to teach students the fundamentals of 3D digital parametric modeling, using SolidWorks, and industry standard engineering application. Content is organized around part modeling, assembly models and technical drawing generation. Students are taught to build conceptual and performance models required in the design practice for visualizing and testing design scenarios. This subject requires students to apply their knowledge of descriptive geometry, problem solving and 3D visualization ability. Students are expected to explore the possibilities of digital modeling (3D Printing) with curiosity and inventiveness, maximizing their confidence and skill level. 2 hours lecture, 4 hours studio. Previous course ARID 220 effective through Spring 2017.

PRDN 221 - Digital Modeling: 3D CAD II **3 Credits**

Prerequisite(s): PRDN 100, PRDN 101, PRDN 111, PRDN 120 and PRDN 220; Product Design majors only. Corequisite(s): PRDN 210 and PRDN 211. The second part of the Digital Modeling # 3D CAD course sequence focuses on expanding students' knowledge gained in Digital Modeling I and builds on the material of other previous course subjects. Content provides an in depth knowledge of Computer Aided Design as it applies to product development on the corporate level. Simulation and visualization of problems, related to form and manufacturing technology are discussed. Students are expected to independently explore the wide range of possibilities and approaches to 3D digital modeling, to take full advantages of the capability of the SolidWorks software. 2 hours lecture, 4 hours studio. Previous course ARID 221 effective through Spring 2017.

PRDN 302 - Product Design Studio II: Industry Collaboration 3 Credits

Prerequisite(s): PRDN 202, PRND 210, PRDN 211, and PRDN 221; Product Design majors only. This course builds upon all knowledge obtained in preceding semesters and focus on utilizing diverse design philosophies and approaches of the development process. Students will work on industry sponsored projects that require user research, market analysis, critical thinking and the development of coherent arguments in all stages of the design process. Students will gain an understanding of marker appropriateness, product development time frame from inception to completion of the design. Students will further explore the employment of model making for both in terms of research and presentation. Students are expected to demonstrate thorough knowledge in all previous subject areas to successfully complete this course. The class is a combination of lectures, tutorials, and studio practice. 2 hours lecture, 2 hours studio. Previous course ARID 302 effective through Spring 2017.

PRDN 303 - Product Design Studio III: Industry Collaboration 3 Credits

Prerequisite(s): PRDN 202, PRND 210, PRDN 211, PRDN 221 and PRDN 302; Product Design majors only. Special fee. In this complex intermediate Product Design Studio environment, students invest the knowledge, skills and experience developed in previous coursework. Through industry-sponsored projects, students will concentrate on aesthetic and technical aspects of designs, appropriate for the junior level. The focus is on applying sustainable design practices in specific cultural and social scenes. Exploration and selection of material in tandem with manufacturing for development of feasible design is key to this course. Students work collaboratively with industry partners, as well as independently. The development of coherent design documentation along with presentation quality prototypes is required. The class is a combination of lectures, tutorials, and Studio practice. 2 hours lecture, 2 hours studio. Previous course ARID 303 effective through Spring 2017.

PRDN 360 - Business of Product Design 3 Credits

Prerequisite(s): PRDN 120, PRND 202, PRDN 211 and PRDN 220; Product Design majors only. This course explores the contractual, legal, financial and ethical issues related to profession of Product Design (and industrial Design). During the semester, students will also focus on developing their resume and a junior level portfolio, for consideration of future COOP and Internship. The expectation is based on actual entry level job advertisements, therefore the portfolio must give evidence of creativity and aesthetic sense, the understanding of the design process, visualizing ideas, technical development, ergonomic study and feasibility testing. The course also introduces students to professional organizations and career development. Successful completion of this course will enable students to develop the appropriate professional conduct associated with the field of Product Design and create a competitive portfolio. 2 hours lecture, 2 hours studio. Previous course ARID 360 effective through Spring 2017.

PRDN 410 - Product Design Thesis: Concept Development 3 Credits

Prerequisite(s): PRDN 302, PRND 303 and PRDN 360; Product Design majors only. Students begin to research and explore design opportunities, developing multiple project concepts based on their own interests for the purpose of proposing a complex industrial design thesis project. Students are required to provide evidence of all the knowledge they have obtained in the major, and to present data resulting from independent studies, exploration and research. The project complexity is expected to be on the level of a senior thesis and a faculty appointed panel evaluates its viability. Students work in conjunction with faculty, external consultants, or an actual client. The class is a combination of lectures, tutorials, and Studio practice. Students required to present one coherent design concept, for final development, supported with technical and user data, as well as several study models that illustrate their thinking process and decision making. 2 hours lecture, 2 hours studio. Previous course ARID 410 effective through Spring 2017.

PRDN 411 - Product Design Thesis: Detail Design 3 Credits

Prerequisite(s): PRDN 410; Product Design majors only. This course is the second part of a two-part course sequence. Students focus on the completion of their thesis projects. They work independently, but receive regular feedback from faculty and their external consultant. The objective is to build students' confidence in developing and finalizing design details and perfecting their projects to achieve a rational design solution. Preparing design documentation, study and presentation models and illustrative presentation panels is compulsory. The class is a combination of lectures, tutorials, and Studio practice. 2 hours lecture, 2 hours studio. Previous course ARID 411 effective through Spring 2017.