

DESIGN (DES)

DES 200 Visual Design Literacy (Units: 3)

Prerequisite: Restricted to Design majors and minors or permission of the instructor.

Fundamental visual design principles, vocabulary, and applications in design. Topics relevant to 2D and 3D design techniques for both tangible and virtual results. (Plus-minus letter grade only) [Formerly DES 323]

DES 210 Our Manufactured World: The Life Cycle of Everyday Objects (Units: 3)

An overview of how common consumer goods are designed, manufactured, marketed, used, and disposed of in industrialized economies. Emphasis on both traditional mass-production techniques (injection molding, casting) and more contemporary computer-aided methods (CAD, 3D printing, etc.). Discussion of the environmental consequences of mass manufacture (pollution, climate change) and some more sustainable alternatives. (Plus-minus letter grade only)

DES 220 Introduction to Drawing for Designers (Units: 3)

Introduction to drawing for design professions: graphic design, industrial design, digital media, and marketing. Learning to draw as learning to see and understand two- and three-dimensional objects, to give form to design ideas and to communicate these ideas to others. (Plus-minus letter grade only)

DES 221 Introduction to 3D Digital Design (Units: 3)

Introduction to Computer-Aided Drafting and Modeling using industry-standard software and techniques. Survey of the field's history and discussions of contemporary trends. Methods of computer modeling from original ideas or references, basic rendering and animation, and presentation of work in professional formats. 3D printing component. Suitable for non-majors. (Plus-minus letter grade only)

DES 222 Digital Design Foundations I (Units: 3)

Digital software and design processes for creating and editing digital images, illustrations, documents for print, and digital applications. Topics include design vocabulary, conceptualization methods, and text formatting. Development and application of knowledge through analysis, critique, projects, and exercises. This course is for prospective Design majors. Activity. (Plus-minus letter grade only)

DES 226 Modern Letterpress Printing: Traditional and Digital Techniques (Units: 3)

Learn typographic principles, terms, and practices through traditional, hands-on typesetting techniques using moveable type. Computer typesetting is used to both plan projects that are then physically composed and printed using a letterpress, as well as to further comprehend typesetting and layout skills. The work done in this course is project-driven, following an iterative process. May be repeated for a total of 6 units. Extra fee required. (Plus-minus letter grade only)

Course Attributes:

- C1: Arts

DES 228 Introduction to Web Design (Units: 3)

Introduction to interaction design, with a focus on web design. Fundamentals of UX/UI and visual interface design, user-centered design, and GUI development will be introduced. Application of basic design principles and elements to live websites built from scratch, with an understanding of HTML and CSS. Exploration of the basics of effective interface design and usability. Activity. (Plus-minus letter grade only)

DES 252 Rethinking Digital Visual Media: History, Technology, and Content (Units: 3)

Digital visual media (computer animation, interactive multimedia, Internet, virtual worlds) viewed through the lenses of history, cultural impact, technology, and production techniques.

DES 256 Design and Society: Contemporary Design Issues and Applications (Units: 3)

Introduction to contemporary design issues, applications, and professions; exploration of design's wide-ranging social impacts from visual communication to product design, transportation to city planning, green design to design for social good. (Plus-minus letter grade only)

Course Attributes:

- C1: Arts

DES 277 Exploration in Meaning and Discourse Through Design (Units: 3)

Prerequisites: Restricted to Design majors and minors; DES 200* and DES 222*.

Explore how design relates to producing meaning and discourse in society. Discussion and demonstration of the application of theory from semiotics and rhetoric to design analysis and production. Activity.

DES 300 Design Process (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors; DES 200*, DES 356*, and DES 370* with a grade of C or better; or permission of the instructor.

Creativity and the design process. Individual and group creative problem solving related to graphic communications and product design/development for industry. Activity. (Plus-minus letter grade only)

DES 305 Lab Safety Basics (Unit: 1)

Prerequisite: Restricted to upper-division Design majors, minors, and graduate students.

Introduction to basic power and hand tools in the product design labs to ensure safe operation of tools for the duration of the student's program of study; proper dress, techniques, and protective equipment. Activity. May be repeated for a total of 2 units. (CR/NC grading only)

DES 310 Product Design I (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors; DES 200*, DES 305*, DES 320*, DES 321*, DES 356*, and DES 370* with grades of C or better; or permission of the instructor.

Industrial manufacturing processes related to the development of three-dimensional objects for product and interior designers and manufacturing personnel. Activity. Extra fee required. (Plus-minus letter grade only)

DES 311 Image Making for Designers (Units: 3)

Prerequisites: Restricted to Design majors and minors; DES 200* and DES 222*.

Exploration of conceptual image making, both representational and non-representational. The use of digital and analog methods of making including (but not limited to) photography, Adobe Illustrator, Adobe Photoshop, and 3Dimensional structures will be explored. Engagement with the rhetorical value of materials and how they can support the communication of an idea or concept. Activity. (Plus-minus letter grade only) [Formerly DES 377A]

DES 320 Drafting and Sketching for Design (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors.

Mechanical and freehand drawing, the reproduction of drawings, and interpretation of graphic projections. Perspective drawing and the common elements of technical illustration. Signs and symbols of design and drafting. Required for BSID majors. Activity. Extra fee required.

DES 321 Technical Drawing I: Introduction to CAD (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors.

Fundamentals of two-dimensional geometric image generation techniques to familiarize the student with computer-aided drafting (CAD). Microcomputer CAD hardware and software. Activity. Extra fee required. (Plus-minus letter grade only)

DES 322 Digital Design Foundations II (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors; DES 222 with a grade of C or better; or permission of the instructor.

Introduction to InDesign and Acrobat, building upon the foundation of industry-standard design software taught in DES 222. Engagement in an iterative design process for production, image editing and rendering, file formatting and resolution, multipage document layout, and project presentation. Extra fee required.

DES 324GW Research and Writing for Design - GVAR (Units: 3)

Prerequisites: Restricted to Design majors; GE Area A2; DES 200*, DES 356*, and DES 370* with a grade of C or better; or permission of the instructor.

Critical examination of works across the industry sub-disciplines of product design, visual communication, and new media. Authoring design concepts and shaping visual presentations. (ABC/NC grading only) [CSL may be available]

Course Attributes:

- Graduation Writing Assessment

DES 325 Graphic Design I (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors; DES 200*, DES 322*, DES 356*, and DES 370* with grades of C or better; or permission of the instructor.

Engagement with the elements and principles of design for use in visual communication (print and screen) design applications. Emphasis on the design process of research, ideation, prototyping, testing and refinement, finalizing, implementation, and evaluation. Discussion of basic production tools and techniques as well as typography, form, and structure. Activity. Extra fee required. (Plus-minus letter grade only)

DES 327 Interactive Design I (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors; DES 200*, DES 322*, DES 356*, and DES 370* with grades of C or better; or permission of instructor.

Introduction to digital media design focusing on Web design. Conceptual approaches to structuring information and interaction, basic graphic design considerations germane to networked media, and basic production skills. Activity. Extra fee required. (Plus-minus letter grade only)

DES 332 Electricity and Electronics (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 200*, DES 356*, and DES 370* with a grade of C or better; or permission of the instructor.

Fundamentals of DC/AC circuits theory and basics of semiconductor devices. Principles of power generation, distribution, and applications. Application of theory to practical applications in home and industry. Activity. Extra fee required.

DES 340 Design and Materials (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 200*, DES 305*, DES 356*, and DES 370* with grades of C or better; or permission of the instructor.

Properties of industrial materials related to the design and manufacture of contemporary products. Design process of material properties and traditional technologies relative to the form and function of design objects. Activity, 3 units. (Plus-minus letter grade only)

DES 356 A History of Design and Technology (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors or permission of the instructor.

History of modern design and attendant technology issues. Antecedents of modern design in product design, visual communications, and allied sectors in design. (Plus-minus letter grade only)

DES 360 Model Development Laboratory (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 200*, DES 305*, DES 356*, DES 370* with grades of C or better; or permission of the instructor.

Rudiments of model building for the industrial designer. Production of various levels of models, including presentation-grade models. Activity. Extra fee required. (Plus-minus letter grade only)

DES 367 Introduction to Game Design (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 200*, DES 322, DES 356*, and DES 370*; or permission of the instructor.

Introduction to game design. Build on a codified language for games and a set of design methodologies collectively called "playcentric design." Develop flexible skills and knowledge to create playable systems more efficiently and collaborate with others more effectively. Activity.

DES 370 Introduction to The School of Design (Unit: 1)

Prerequisites: Restricted to Design majors and minors with sophomore standing or above; or permission of the instructor.

Orientation to the design major program and concentrations, to the university, to department resources, and to extracurricular opportunities. Issues and trends in design, technology, and industry will be discussed. Introduction to strategies for student success, including, but not limited to: time management, meeting deadlines, effective communication, and meeting with faculty advisors. Professional outlooks and opportunities for graduate study will also be covered. (CR/NC grading only)

DES 377B Visual Storytelling (Units: 3)

Prerequisites: Restricted to Design majors and minors; DES 200*, DES 222*, DES 322*, DES 325*, and DES 327*.

Introduction to visual storytelling through design with analysis of narrative theory and structure, point of view and persuasive techniques, and intended audience(s). Guided assignments in sequence, pacing, content and image selection, curation, translation of material into new formats, and development of design "voice" to tell a story. Activation of community oral narratives and other archival materials in experimental formats for print and screen. Activity.

DES 405 How to Develop, Patent, and Market an Idea (Units: 3)

Prerequisite: Restricted to upper-division standing or permission of the instructor.

Presentations by experts from the field concerning consumer trends, procedures, pitfalls, advantages, and disadvantages involved in developing, patenting, and marketing new ideas or products.

DES 410 Product Design II (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 300*, DES 305*, DES 310*, DES 321*, and DES 420* (may be taken concurrently); or permission of the instructor.

Introduction to the product design and development process: people, process, and product. User/market research, product development documentation, concept visual, models, and applications. Activity. Extra fee required. (Plus-minus letter grade only)

DES 420 Rapid Visualization (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 320* and DES 370* with grades of C or better.

Illustration of product and graphic design ideas. Three-dimensional sketching and rendering techniques. Lecture, 2 units; activity, 1 unit. (Plus-minus letter grade only)

DES 421 Technical Drawing II: 3-D Solid Modeling (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 321* or equivalent; or permission of the instructor.

Industry-standard computer-aided drafting. Use of computers to develop working drawings in architectural and industrial design. Practice with industrial input and output devices. Activity. (Plus-minus letter grade only)

DES 425 Graphic Design II (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 325* with a grade of C or better; or permission of the instructor.

Building on the design and problem-solving skills explored in Graphic Design I, students work on more advanced and complex projects. Classic design briefs and experimentation in contemporary applications of type, letterforms, and imagery as design elements are combined with guided, complex design problems. Activity. Extra fee required. (Plus-minus letter grade only)

DES 427 Interactive Design II (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 327* with a grade of C or better; or permission of the instructor.

Rich media design strategies and authoring techniques featuring graphical interaction, motion graphics, sound, and video content for Web and mobile platforms. Activity. (Plus-minus letter grade only)

DES 448 User Experience Design (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 300*, DES 327*; or permission of the instructor.

Explore user experience (UX) design process, research methods, prototyping techniques, and UX in industry contexts. Specific topics covered include user interface (UI) design, iterative prototyping methods, user research (for designers), usability testing, heuristic evaluations, ethics and social justice in UX design, design systems, strategy, and articulating UX problem-solving in presentation and writing. May be repeated for a total of 6 units. Activity (Plus-minus letter grade, CR/NC/ RP)

DES 456 Design Thinking Principles and Practices (Units: 3)

Prerequisite for DES 756: Graduate standing or permission of the instructor.

Prerequisites for DES 456: Restricted to upper-division Design majors; DES 200*, DES 356*, and DES 370* with grades of C or better; GPA of 3.0* or higher; or permission of the instructor.

Design thinking is a method for problem-solving and innovation that promotes an understanding of and empathy for the needs of the end-user of the product or service, and that emphasizes an iterative, process-based approach to problem-solving. Introduce design thinking methods including user-based research techniques and prototyping, offer opportunities to apply these methods to class projects, and examine case studies. (Plus-minus letter grade only)
(DES 456/DES 756 is a paired course offering. Students who complete the course at one level may not repeat the course at the other level.)

DES 460 Rapid Prototyping and Manufacturing Systems (Units: 3)

Prerequisites: Restricted to Design majors; DES 300*, DES 310*, and DES 321* or equivalents; or graduate Design students; or permission of the instructor.

Design applications for Rapid Prototyping and Computer Integrated Manufacturing (CIM) systems; Manufacturing Resource Planning (MRP), integration methodologies and flexible manufacturing systems. Activity. Extra fee required. (Plus-minus letter grade only)

DES 475 Topics in Design (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 300* and DES 322* or equivalents; or permission of the instructor.

Directly supervised special topic design study taking various forms including teaching assistantship, group project, etc. Topics to be specified in the Class Schedule. Activity. May be repeated for a total of 9 units when topics vary.

Topics:

- a. Exploring Package Design
- b. Introduction to Solar Energy
- c. Contemporary Design Issues
- d. A Business Approach to Branding and Marketing

DES 505 Senior Design Project (Units: 3)

Prerequisites: Restricted to senior Design majors; DES 200*, DES 322*, DES 324GW*, DES 356*, and DES 370*.

Culminating Design problem-solving experience. Initiating an industrial research and development project; conducting all phases of the design development, from initial research, testing, and prototyping, along with feasibility analysis and presentation. Activity. (Plus-minus letter grade only) [CSL may be available]

DES 521 Technical Drawing III: Advanced Modeling and Rendering (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 321* and DES 421*; or permission of the instructor.

Advanced techniques in solid and surface modeling and rendering, using computer-aided design software and rendering programs to create accurate and visually compelling 3-D models; rapid prototyping component. Activity. (Plus-minus letter grade only)

DES 523 Information Design I: Data Visualization (Units: 3)

Prerequisites: Restricted to upper-division Design majors or minors; DES 200*, DES 300*, DES 322*, DES 325*, DES 327*, DES 356*, and DES 370*; or permission of the instructor.

Introduction to the field of information design focusing on data visualization problems for digital media, print, and environmental communication. Activity. (Plus-minus letter grade only)

DES 525 Graphic Design III: Advanced (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 425* with a grade of C or better; or permission of the instructor.

Application of design principles in the solution of complex design projects. Activity. Extra fee required. (Plus-minus letter grade only)

DES 527 Interactive Design III (Units: 3)

Prerequisites: Restricted to Design majors; DES 427* with a grade of C or better; or permission of the instructor.

Focused experimentation and production in topics such as XR (AR and VR), motion graphics, and interaction design. Activity. (Plus-minus letter grade only)

DES 560 Prototyping Smart Devices (Units: 3)

Prerequisites: Restricted to upper-division Design majors or minors; DES 310*, DES 321*, and DES 360*, or permission of the instructor.

Computer programming and electronic hardware design as applicable to product design practice. Use of microcontrollers, sensors, digital I/O devices, and various programming environments. Techniques of prototyping interactive electronic "smart" products for demonstration and evaluation. Activity. Extra fee required. (Plus-minus letter grade only)

DES 570 Professional Practices for Designers (Units: 3)

Prerequisites: Restricted to senior Design majors; DES 300*, DES 322*, (DES 325* and DES 327*) or DES 310*; or permission of the instructor.

Professional standards and practices of design. Development of an entry-level design portfolio and supporting documentation. Investigation of design and related roles in industry, employment opportunities, professional associations, design ethics, and interview skills. Hybrid components. Activity. (Plus-minus letter grade only)

DES 575 Contemporary Design Workshop (Units: 3)

Prerequisites: Restricted to upper-division Design majors and minors; DES 200*, DES 356*, and DES 370*.

Supervised projects on variable topics that may include CSL. Topics to be specified in the Class Schedule. May be repeated when topics vary. Activity. Extra fee may be required. [CSL may be available]

Topics:

- a. Emerging Media
- b. Biomimicry
- c. Social and Community Design
- d. Justice Design: Crafting Ethical Design Solutions

DES 576 Practical Experience: Internship (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 200*, DES 356*, and DES 370*.

In-service experience in a special field. Directed experience in teaching and/or industry. Lecture, 1 unit; activity, 2 units. May be repeated for a total of 9 units. (CR/NC grading only) [CSL may be available]

DES 625 Graphic Design Practicum: Design Working Group (Units: 3)

Prerequisite: Restricted to upper-division Design majors; DES 325* and DES 425*; or graduate Design students.

Produce actual projects from beginning to end: concept to design to production. Students work directly with clients, both individually and in teams while gaining an understanding of the impact of materials and production costs as they produce materials promoting the University's programs, events, and initiatives. May be repeated for a total of 6 units. Activity. (Plus-minus letter grade only) [CSL may be available]

DES 627 Advanced Projects in Visual Communication Design (Units: 3)

Prerequisite: Restricted to upper-division Design majors and minors; DES 325 and DES 327; or permission of the instructor.

Development of projects in advanced areas of interactive and/or print media. Special topics may include user experience and brand identity design. Activity. May be repeated for a total of 6 units when topics vary. (Plus-minus letter grade only) [CSL may be available]

Topics:

- a. Brand Identity Design
- b. Visual Design for User Experience
- c. Type in Motion: Motion Graphics

DES 628 Design Gallery: Exhibitions and Communications (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 322* and DES 356* with grades of C or better; or permission of the instructor.

Theory and production of exhibitions, symposia, and publications for the Design Gallery, including planning, preparation, annotation, and critique. Activity. May be repeated for a total of 6 units. (Plus-minus letter grade only)

DES 677 Exploration in Delightful Design (Units: 3)

Prerequisites: Restricted to Design majors and minors. DES 200*, DES 322*, DES 325*, and DES 327*; or permission of the instructor.

Delightful design helps people live a happy and flourishing life. Explore concepts from semiotics, rhetoric, and aesthetics to applying them in design projects focused on living pleasantly (hedonia) and well (eudaimonia). Through design critiques, research, and projects, there will be discussion and demonstration of the compositional and experiential qualities that shape delightful design and how it supports the hedonic and eudaimonic dimensions of everyday life. Activity.

DES 685 Projects in the Teaching of Design (Units: 1-4)

Prerequisite: Permission of the instructor; completion of an equivalent course in the subject matter.

Teaching experiences in design practice, theory, and history through assigned instructional projects as classroom aides. Training in teaching principles including supervised classroom teaching activities. (Students may earn a maximum of 4 units toward the baccalaureate degree for any course(s) numbered 685 regardless of discipline.)

DES 699 Independent Study in Design (Units: 3)

Prerequisites: Restricted to upper-division Design majors; DES 200*, DES 300*, DES 322*, DES 356*, and DES 370* with grades of C or better; cumulative GPA of 3.0*; or permission of the instructor.

Supervised study of a particular problem in design. Open to students who have demonstrated the ability to work independently. May be repeated for a total of 6 units.

DES 700 Seminar in Design Research (Units: 3)

Prerequisite: Restricted to Design graduate students; Graduate Essay Test, which must be taken within six months of starting the graduate program.

Seminar in research methodology and introduction to the graduate program. Must be completed in the first semester of enrollment. (Plus-minus letter grade only)

DES 701 Seminar: Trends and Issues (Units: 3)

Prerequisite: Graduate standing in Family and Consumer Sciences or the School of Design.

Trends and issues in discipline-specific fields affecting individuals, families, and communities. Review of research and application of findings to problems. (This course is offered as FCS 700 [Formerly CFS 700] and DES 701. Students may not repeat the course under an alternate prefix.)

DES 724 Graduate Research and Writing Methods in Design (Units: 3)

Prerequisite: DES 700* or permission of the instructor.

Overview and practicum of graduate-level research methods and scholarly writing forms, such as literature review, methods, abstracts, in preparation for graduate creative work and thesis projects. Project-based approach including collaborative, hands-on, and student-led learning. (Plus-minus AB/NC)

DES 755 Seminar in Design Management (Units: 3)

Prerequisites: Restricted to Design graduate students; DES 700*; or permission of the instructor.

Students create a production using their project management skills throughout the experience. (Plus-minus letter grade only)

DES 756 Design Thinking Principles and Practices (Units: 3)

Prerequisite for DES 756: Graduate standing or permission of the instructor.

Prerequisites for DES 456: Restricted to upper-division Design majors; DES 200*, DES 356*, and DES 370* with grades of C or better; GPA of 3.0* or higher; or permission of the instructor.

Design thinking is a method for problem-solving and innovation that promotes an understanding of and empathy for the needs of the end-user of the product or service, and that emphasizes an iterative, process-based approach to problem-solving. Introduce design thinking methods including user-based research techniques and prototyping, offer opportunities to apply these methods to class projects, and examine case studies. (Plus-minus letter grade only)
(DES 456/DES 756 is a paired course offering. Students who complete the course at one level may not repeat the course at the other level.)

DES 800 Seminar in Design Topics (Units: 3)

Prerequisites: Restricted to graduate Design students; DES 700* or equivalent.

Design theory and practice. Special techniques in individual and group approaches to problem-solving. (Plus-minus letter grade only)

DES 805 Seminar in Design Methodology (Units: 3)

Prerequisite: Restricted to Design graduate students or permission of the instructor.

Research-driven design projects using advanced methodologies related to user-centered design, market/consumer research, human factors, product development, etc. Topics to be specified in Class Schedule. May be repeated when topics vary. (Plus-minus letter grade only)

Topics:

- a. Visual Communications
- b. Industrial Design

DES 852 Directed Experience in Design (Units: 3)

Prerequisites: Restricted to graduate standing; permission of the graduate major adviser, supervising faculty member, and department chair.

Preparatory course preceding graduate creative work or thesis project comprising investigation of literature and/or prior art, formulation of a research question, preparation of creative work/thesis proposal, completion of a research plan, and presentation. May be repeated for a total of 6 units. [CSL may be available]

DES 894 Creative Work Project (Units: 3)

Prerequisites: Permission of the instructor and departmental graduate committee; and approval of Advancement to Candidacy (ATC) and Culminating Experience (CE) forms by Graduate Studies. ATC and Proposal for Culminating Experience Requirement forms must be approved by the Graduate Division before registration.

(CR/NC, RP grading only)

DES 898 Master's Thesis (Units: 3)

Prerequisites: Permission of the instructor and major adviser and approval of Advancement to Candidacy (ATC) and Culminating Experience (CE) forms by Graduate Studies. ATC and Proposal for Culminating Experience Requirement forms must be approved by the Graduate Division before registration.

(CR/NC grading only)

DES 899 Independent Study (Units: 3)

Prerequisite: Enrollment by petition approved by the supervising instructor, the major adviser, and the department chair.

Special study of a particular problem in industry or industrial education conducted under the direction of a faculty member. May be repeated.

[CSL may be available]