

# Art - Design (ARTG)

## **ARTG 1001. Design Perspectives: An Introduction to Design in the World. (2 Hours)**

Introduces students to a range of perspectives and points of view on design as a human activity. Explores a mix of theories, principles, practices, and histories that constitute various understandings of design across cultures. Through illustrative case studies, examines impacts, influences, accomplishments, consequences, possibilities, and limits of design in the world. Investigates what it means to develop a personal design practice.

**Corequisite(s):** ARTG 1002

## **ARTG 1002. Seminar for Design Perspectives. (2 Hours)**

Offers a small-group discussion format to cover material in ARTG 1001 and provides opportunities for the application of course topics.

**Corequisite(s):** ARTG 1001

## **ARTG 1250. Design Process Context and Systems. (4 Hours)**

Explores common design practices, principles, and vocabularies, introducing the design process as a method of inquiry and problem solving through studio projects. Emphasizes the importance of an awareness of audience and context in the creation of meaningful communications and experiences. Explores the practice of design as an iterative process, offering students an opportunity to obtain an understanding of the value of systems thinking and the importance of feedback and exchange as a means for assessing the quality of design's effectiveness in helping users achieve their goals.

**Attribute(s):** NUpath Creative Express/Innov

## **ARTG 1255. Design Process Context and Systems Abroad. (4 Hours)**

Explores common design practices, principles, and vocabularies, introducing the design process as a method of inquiry and problem solving through studio projects. Emphasizes the importance of an awareness of audience and context in the creation of meaningful communications and experiences. Explores the practice of design as an iterative process, offering students an opportunity to obtain an understanding of the value of systems thinking and the importance of feedback and exchange as a means for assessing the quality of design's effectiveness in helping users achieve their goals. Taught abroad. May be repeated without limit.

## **ARTG 1990. Elective. (1-4 Hours)**

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

## **ARTG 2250. Typography 1. (4 Hours)**

Introduces typography as the basis of graphic design and visual communication. Guides students through an understanding of letterforms, words, sentences, and text as both image and information. Studies form, context, and visual meaning. Introduces use of the typographic grid and issues of hierarchy and legibility through assigned projects, readings, and lectures. Includes the historical evolution of typefaces and their classification as a rational system.

**Prerequisite(s):** ARTF 1122 with a minimum grade of D-

**Corequisite(s):** ARTG 2251

**Attribute(s):** NUpath Creative Express/Innov

## **ARTG 2251. Type Tools. (1 Hour)**

Offers students an opportunity to acquire technical software skills used in typesetting, such as Adobe InDesign, in this introductory lab.

**Corequisite(s):** ARTG 2250

## **ARTG 2252. Graphic Design 1. (4 Hours)**

Explores graphic form and vocabulary through the development of icons and symbols. Applies graphic design principles to the correlation of forms with their function, content, and context. Incorporates a variety of media as visual communication elements.

**Prerequisite(s):** ARTF 1122 with a minimum grade of D-

**Attribute(s):** NUpath Creative Express/Innov

## **ARTG 2260. Programming Basics. (4 Hours)**

Exposes students to basic programming design for user interfaces. Offers students an opportunity to become familiar with the logical elements of programming languages. Through lectures, hands-on in-class exercises, and modular projects, explores Web-based design and programming solutions for managing interaction and animation.

## **ARTG 2400. Interaction Design 1: Responsive. (4 Hours)**

Applies information design principles to Web and mobile interface design. Explores user-centered interface and programming design strategies for the delivery of responsive data-driven websites. Discusses audience definition, content development, information structuring, and navigation. Emphasizes tools and strategies for design, such as site maps, wireframes, prototypes, usability testing, and iterative development. Offers students an opportunity to obtain meaningful interactive experiences through team-based projects.

**Prerequisite(s):** ARTF 2223 with a minimum grade of D-

**ARTG 2401. Interaction Design Tools. (1 Hour)**

Introduces skills and software used in designing and developing Web-based interactive environments. Explores Web-page scripting and tagging, CSS-based design coding, options for front- and back-end page design connections, and alternative technologies.

**Prerequisite(s):** ARTG 2400 (may be taken concurrently) with a minimum grade of D-

**ARTG 2990. Elective. (1-4 Hours)**

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

**ARTG 3100. Physical and Digital Fabrication. (4 Hours)**

Explores interdisciplinary projects and themes in immersive media and physical making by fabricating novel artifacts and experiences. Students form groups to create design solutions to wicked problems. Student teams follow a hackathon model to explore multiple ideas quickly. By engaging in critique and studio practice, offers students an opportunity to demonstrate and grow their technical skills.

**Prerequisite(s):** ARCH 2260 with a minimum grade of D- or ARTD 2000 with a minimum grade of D- or ARTF 1124 with a minimum grade of D- or ARTG 2260 with a minimum grade of D- or CS 2510 with a minimum grade of D- or GE 1502 with a minimum grade of D-

**ARTG 3250. Physical Computing. (4 Hours)**

Explores the communication between the physical world and the interactive, computer-based interface. Examines the potential of reactive analog and digital devices embedded within the physical realm. Offers students an opportunity to use simple kit sensors and indicators designed to enable student teams to create interfaces triggered by gesture, bodily movement, physical forces, and other tangible actions. Concludes with discussions of more complex interactive devices, the relationship between physical computing and robotics, and possible future directions.

**Prerequisite(s):** ARTG 2400 with a minimum grade of D-

**Attribute(s):** NUpath Analyzing/Using Data, NUpath Creative Express/Innov

**ARTG 3350. Typography 2. (4 Hours)**

Continues ARTG 2250, exploring structures and hierarchies through increasing typographic complexity. Investigates meaning, legibility, and readability with an emphasis on voice, organization, sequence, and the typographic grid.

**Prerequisite(s):** ARTG 2250 with a minimum grade of D-

**Attribute(s):** NUpath Creative Express/Innov

**ARTG 3450. Graphic Design 2. (4 Hours)**

Explores the conceptual potential inherent in the merging of words/text with images/symbols to achieve a level of communication that exceeds the sum of visual and verbal components. Examining how the relationship of verbal and visual content can enhance meaning and comprehension, students identify a social issue of personal relevance and create a visual campaign targeting a core audience. Through a process including projects, readings, and lectures/discussions, students research, frame concepts, explore visual decisions, and determine appropriate deliverables.

**Prerequisite(s):** ARTG 2252 with a minimum grade of D-

**Attribute(s):** NUpath Creative Express/Innov

**ARTG 3451. Information Design 1. (4 Hours)**

Introduces basic concepts, methods, and procedures of information design with a focus on mapping information. Students investigate visual systems and information structures such as maps, graphs, charts, and diagrams. Emphasizes the creative process of organizing, visualizing, and communicating data by making complex information easier to understand and use.

**Prerequisite(s):** ARTG 3350 with a minimum grade of D-

**ARTG 3460. Identity and Brand Design. (4 Hours)**

Addresses the origins, significance, and consequence of identity and branding expressions, in diverse media, in terms of personal, cultural, and commercial values. Using design research and studio methods, a series of exercises explores expressions of individual and collective identity. Offers students an opportunity to work in teams to develop branding projects in a process designed to increase their capacity to create effective brand expressions and analyze semiotic significance and cultural and economic value. Critique of work and presentation of concepts of identity and brand seek to sharpen students' skills and challenge their ideas about brand. External critique seeks to create valuable tests of bias and assumptions, while principles of managing attention and trust seek to build the ability to function as a brand steward in actual practice.

**Prerequisite(s):** ARTG 2250 with a minimum grade of D-

**ARTG 3462. Experience Design 1. (4 Hours)**

Investigates a wide range of design research methods and means of representing user intentions and actions in order to develop coherent designs based on the needs of the user. Includes use of context assessment, user experience audits, and scenario development as means to understand the motivations, behaviors, and values of audiences and participants.

**Prerequisite(s):** ARTG 1250 with a minimum grade of D or ARTG 1255 with a minimum grade of D

**ARTG 3463. Experience Design 2. (4 Hours)**

Continues ARTG 3462 processes and strategies for creating compelling human-centered experiences. Offers students an opportunity to use design processes from multiple disciplines to develop real-world solutions.

**Prerequisite(s):** ARTG 3462 with a minimum grade of D- or ARTG 3465 with a minimum grade of D-

**ARTG 3465. Experience Design 1 Abroad. (4 Hours)**

Investigates a wide range of design research methods and means of representing user intentions and actions in order to develop coherent designs based on the needs of the user. Includes use of context assessment, user experience audits, and scenario development as a means to understand the motivations, behaviors, and values of audiences and participants. Taught abroad. May be repeated without limit.

**ARTG 3510. Contextual and Theoretical Studies 2. (4-6 Hours)**

Seeks to develop broader knowledge and understanding of the historical, social, practical, theoretical, and cultural ideas, practices, and phenomena of contemporary culture, design, art, and media in its broadest sense, from architecture to sound design. Offers students an opportunity to further contextualize aspects of art, media, design, and social theory by focusing upon a specific option and by writing a thesis proposal. Provides a program of work based on one option subject from the field of art, design, media, and visual culture. Offered by the University of Arts London for students pursuing international study.

**ARTG 3520. Marketing Communications and Cultures 2. (4-6 Hours)**

Explores the theories and principles of contemporary marketing communications tools and practices and sets them within a global, cultural, social, and historical context. Considers market engagement with human motivation and behaviors in terms of persuasion techniques, analyzing both historical models and contemporary trends. Offers students an opportunity to investigate global market landscapes, target markets, and consider how communication strategies and tactics are developed and organized to respond to stakeholders' needs in terms of traditional and new media platforms. Investigates the histories, theories, and processes of branding and debates its pros and cons while considering the ways in which branding could benefit your own practice. Offered by the University of Arts London for students pursuing international study.

**ARTG 3530. Interdisciplinary Projects and Practices. (4-6 Hours)**

Continues ARTG 3520, drawing together the elements of the course by offering students an opportunity to work collaboratively on interdisciplinary/industry projects. Offered by the University of Arts London for students pursuing international study.

**ARTG 3700. Interaction Design 2: Mobile. (4 Hours)**

Explores user-centered interface design for information exchanges using handheld and mobile devices. Studies the potentials for leveraging both the social and locative possibilities of mobile devices through research, discussions, and project assignments.

**Prerequisite(s):** ARTG 2400 with a minimum grade of D-

**ARTG 3990. Elective. (1-4 Hours)**

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

**ARTG 4550. Design Degree Project. (4 Hours)**

Encompasses the proposal and execution of a comprehensive project in graphic, interaction, or experience design. Guides students in practical, hands-on implementation of contemporary design methods, as individuals or small interdisciplinary teams. Offers students an opportunity to develop an actionable design proposal and complete a polished project using appropriate design methods, as well as the opportunity to deepen understanding of the ways of knowing through design practice. Serves as a culmination to the undergraduate program.

**Attribute(s):** NUpath Capstone Experience, NUpath Creative Express/Innov

**ARTG 4552. Information Design 2. (4 Hours)**

Offers students an opportunity to develop strategies for structuring and communicating complex information to increase understanding through dynamic states, which are controlled through the interaction of end users. Explores possibilities offered by interfaces that mediate between a person and information space through research, projects, readings, and discussions.

**Prerequisite(s):** (ARTG 3352 with a minimum grade of D- or ARTG 2400 with a minimum grade of D-); ARTG 3451 with a minimum grade of D-

**ARTG 4554. Typography 3. (4 Hours)**

Offers an advanced course exploring a variety of typographical solutions, including expressive formal and complex content-based projects.

**Prerequisite(s):** ARTG 3350 with a minimum grade of D-

**Attribute(s):** NUpath Creative Express/Innov

**ARTG 4555. Graphic Design Synthesis. (4 Hours)**

Offers students experience in the design of identity, information, persuasive messaging, and publication projects. Focuses on cross-platform (print, digital, and three-dimensional) manifestations—all based on a single area of content.

**Prerequisite(s):** ARTG 3450 with a minimum grade of D-; ARTG 3350 with a minimum grade of D-

**ARTG 4990. Elective. (1-4 Hours)**

Offers elective credit for courses taken at other academic institutions. May be repeated without limit.

**ARTG 5000. Topics in Design. (1-4 Hours)**

Explores a variety of key topics in design, including historical and cultural models. Taught by faculty on topics related to their research and expertise.

**ARTG 5100. Information Design Studio 1: Principles. (4 Hours)**

Explores the theories and practices of information design through studio projects. Investigates visual systems and information structures such as maps, timelines, charts, and diagrams. Emphasizes the creative process of organizing, visualizing, and communicating data by seeking to make complex information easier to understand and use. Requires graduate standing or permission of program coordinator or instructor.

**ARTG 5110. Information Design History. (4 Hours)**

Investigates the history of visualization practices across disciplines and in relation to technology developments. Critically examines seminal visualizations in social, cultural, and technological contexts by means of discussions and writing activities in a seminar format. Requires graduate standing or permission of program coordinator or instructor.

**ARTG 5120. Research Methods for Design. (4 Hours)**

Examines qualitative and quantitative research methods pertinent to design. Through discussion and writing activities, offers students an opportunity to investigate varied inquiry toward the development of researchable questions, argument formation, and assessment methodologies. Students who do not meet course restrictions may seek permission of instructor.

**ARTG 5130. Visual Communication for Information Design. (4 Hours)**

Explores graphic and typographic theory, principles, and practices. Introduces students to visual communication design with a primary focus on typography as the fundamental means of conveying content. Readings locate design and typography within the larger history of visual art and writing development. Covers methods of organizing content through hierarchy and spatial organization of grid structures. Considers relationships between positive and negative space, depth perception, transparency, and color theory. Requires graduate standing or permission of program coordinator or instructor.

**ARTG 5150. Information Visualization Principles and Practices. (3 Hours)**

Introduces information visualization from theoretical and practical perspectives. Defines the information visualization domain and advances principles and methods for the effective visual representation of data. Contextualizes the field from a historical perspective. Presents the perceptual and cognitive tasks enabled by visualizations. Studies an extensive range of visualization models. Illustrates good and bad practices in visualization with real-world examples. Introduces concepts in computer programming in an information visualization context.

**ARTG 5151. Information Design Critique Seminar. (1 Hour)**

Requires students to present their work in design critique sessions to peers, faculty, and guests. Through these critiques, offers students an opportunity to improve their projects based on feedback, learn how to present their work effectively, and articulate design problems in verbal discourse. Can only be taken in conjunction with ARTG 5150.

**Prerequisite(s):** ARTG 5150 (may be taken concurrently) with a minimum grade of C or ARTG 5150 (may be taken concurrently) with a minimum grade of C

**ARTG 5310. Visual Cognition. (4 Hours)**

Introduces human visual cognition as it applies to information design and visualization. Focuses on perception, attention, pattern recognition, information acquisition, memory, and creation of mental models. Explores reasoning, cognition, decision making, and problem solving in relation to visual artifacts. Students who do not meet course restrictions may seek permission of instructor or program coordinator.

**ARTG 5320. Statistics for Design. (4 Hours)**

Offers design students an opportunity to obtain the necessary skills to collect, summarize, analyze, and interpret data. Introduces concepts and methods in statistical reasoning and analysis. Topics include data mining, comparison, assessment, and delivery. Students who do not meet course restrictions may seek permission of instructor or program coordinator.

**ARTG 5330. Visualization Technologies 1: Fundamentals. (4 Hours)**

Introduces programming languages that allow computational analysis and digital delivery of dynamic information. Examines implications of environmental and personal sensor data sources, mobile collection and analysis of data, real-time networked data sets, and social use of shared data visualization tools. Students who do not meet course restrictions may seek permission of instructor or program coordinator. May be repeated once.

**ARTG 5430. Visualization Technologies 2: Advanced Practices. (4 Hours)**

Builds on the foundational skills acquired in ARTG 5330. Introduces students to intermediate- to advanced-level topics in web-based interactive visualization. Focuses on building greater proficiency in working with d3 and related JavaScript libraries and on acquiring knowledge of best practices and common patterns in data visualization problem solving. Through lectures, workshops, and a final project, offers students an opportunity to learn to effectively deploy their data visualization skills to explore and extract understanding from data in a critical and productive way.

**Prerequisite(s):** ARTG 5330 with a minimum grade of C- or ARTG 5330 with a minimum grade of D-

**ARTG 5600. Experience Design Studio 1: Principles. (4 Hours)**

Offers students hands-on project development of systems, artifacts, communication, environments, or service offerings with a focus on the unique personal experience of the audience exposed to the project. Experience design is a holistic approach to design that investigates the human experience in specific situations to improve its quality, given an understanding of human goals, needs, and desires. This course provides a context for a cohesive experience through interaction, movement, and understanding, which builds on previous knowledge of audiences and applications. Presents students with design methods and processes for experience design by developing a semester-long project. Offers students an opportunity to develop competency in tools used to create the various elements that create the context for experiences in specific situations and events including interaction, artifact, and environment design. Understanding a design process and knowledge of studio critique practices is recommended.

**ARTG 5610. Design Systems. (4 Hours)**

Explores a systems-based perspective on our environment by addressing questions that are fundamental to design practice: What is a system, and what are the different types? How do we observe, analyze, and represent systems? What interactions can we have with systems and what are the different types of interaction? Explores structures and processes for the design of systemic relationships between people, artifacts, environments, and activities. Systems may be physical, virtual, social, or a combination. Through discussion, writing, diagramming, and project exercises, offers students an opportunity to learn principles of systems theory and explore the connection between design methods and systems thinking. Students who do not meet course restrictions may seek permission of instructor or program coordinator.

**ARTG 5620. Notational Systems for Experience. (4 Hours)**

Examines theoretical foundations, concepts, and methods of visual notational systems used in the effective analysis and communication of existing experiences and in the envisioning of conditions for future experiences. Notational systems are sets of graphic signs and codes that denote or prescribe specific actions, forces, operations, events, or performances that occur over time. Students engage with concepts and models through readings, discussion, case study analyses, and speculative design projects. Evaluates the role that notational systems play in documenting, analyzing, and understanding the human goals, actions, behaviors, and perceptions key to experience and assesses their value in designing for agency and new experiences. Students who do not meet course restrictions may seek permission of instructor or program coordinator.

**ARTG 5640. Prototyping for Experience Design. (4 Hours)**

Explores tools, technologies, and processes to create prototypes of artifacts, environments, and interactive systems for experience design projects. Offers students the opportunity to learn, use, experiment with, and test prototypes using a wide range of state-of-the-art prototyping technologies to further their understanding of multiple strategies and techniques of prototyping for experience design. Tools and techniques change over time but typically include laser cutting, 3D printing, CNC machining, electronics prototyping, augmented reality, machine tools and 2D forming, fast prototyping, and hand tools.

**ARTG 5710. Design for Dignity. (4 Hours)**

Explores the ethical dimensions of design practice through design projects. This studio course addresses design problems with a focus on the concept of dignity as a central principle of human-centered design. Uses readings and in-class activities to study human value systems, dignity as a principle, and service design as a process of deliberation. Offers students an opportunity to practice applying these perspectives, models, and theories to create compelling design projects as well as to develop competencies in collective participation in community.

**ARTG 6100. Information Design Studio 2: Dynamic Mapping and Models. (4 Hours)**

Continues the exploration of data representations in a variety of media. Focuses on interactive and time-based techniques. Emphasizes computational methods of data collection, manipulation, and encoding. Requires graduate standing or permission of program coordinator or instructor. May be repeated once.

**Prerequisite(s):** ARTG 5100 with a minimum grade of D- or ARTG 5100 with a minimum grade of C- (Graduate)

**ARTG 6110. Information Design Theory and Critical Thinking. (4 Hours)**

Examines various theoretical models of information visualization and delivery systems. Evaluates the concepts and effectiveness of the models through discussions and writing activities. Students who do not meet course prerequisites or restrictions may seek permission of program coordinator or instructor.

**Prerequisite(s):** ARTG 5100 with a minimum grade of C-

**ARTG 6200. Information Design Studio 3: Synthesis. (4 Hours)**

Continues the exploration of theories of information design and visualization through focused projects that are intended to lead to development of a thesis project. Requires graduate standing or permission of program coordinator or instructor.

**Prerequisite(s):** ARTG 5100 with a minimum grade of C- or ARTG 5100 with a minimum grade of D-

**ARTG 6310. Design for Behavior and Experience. (4 Hours)**

Examines the potential of interfaces as mediators between information and users. Explores iterative prototyping and research methods to analyze patterns of behavior and implications of interface on effective communication. Utilizes observation, empathy, ethnography, and participatory design methods to offer students an opportunity to increase their understanding of audiences' and stakeholders' motivations and expectations. Requires graduate standing or permission of program coordinator or instructor.

**ARTG 6330. Information Design Mapping Strategies. (4 Hours)**

Examines the relationships between content and context through mapping methods. Emphasizes the impact of geographic information systems, evolving technologies, community mapping tools, globalization, and delivery systems. Undergraduate students may seek permission of instructor.

**ARTG 6555. Graphic Design Synthesis. (4 Hours)**

This course has been designed for graduate students in the Information Design and Visualization program. It builds on skills obtained in the ARTG 5100 Information Design Studio: Principles course. The course is intended to give the students experience in the design of identity, information, and publication projects, as well as focus on cross-platform (print, digital, and three-dimensional) manifestations – all based on a single area of content. Its scope reflects the multi-faceted components that comprise real-world comprehensive design projects. Through additional research and readings, students are to perform at high level, and demonstrate how the readings of theoretical material reflect in their projects. Information and Design Visualization graduate students, or permission of the teacher.

**ARTG 6600. Experience Design Studio 2: Group and Interpersonal. (4 Hours)**

Offers students an opportunity to learn a human-centered design perspective and to develop experience design competency in the complex context of interpersonal and group interactions. Experience design is a holistic approach that investigates the human experience in specific situations in order to improve its quality. Students study the person-to-person aspect of human-centered design through readings and in-class activities, as well as practice applying its perspectives, models, and theories to the project process. Students are asked to participate in class discussions and create compelling experience design projects to address the needs, desires, fears, and aspirations of their audience.

**Prerequisite(s):** ARTG 5600 with a minimum grade of C-

**ARTG 6700. Design Studio 3: Synthesis. (4 Hours)**

Extends the exploration of design principles and methods by starting the development of a design master thesis. Examines how to develop effective design interventions capable of enriching human experience in specific situations, sites, and in the context of comprehensive activities. Emphasizes a systems perspective in both research and design development—the relationships between diverse participant groups and communities as well as the complex implications and interrelations of interventions at multiple scales and dimensions. Continues the exploration of theories of information design and visualization. Offers students an opportunity to prototype functioning applications that advance their thesis projects.

**Prerequisite(s):** ARTG 6100 with a minimum grade of C- or ARTG 6600 with a minimum grade of C-

**ARTG 6900. Special Topics in Design. (4 Hours)**

Explores focused research topics relevant to the graduate program curriculum. Undergraduate students may seek permission of program coordinator or instructor. May be repeated up to five times.

**ARTG 7100. Critical Design and Research Seminar. (4 Hours)**

Examines emerging research and critical practices in design. Provides conceptual frameworks to formalize and iterate on students' thesis topics. Presents and frames qualitative research methods for application in thesis research. Offers students an opportunity to develop the visual and verbal expression of the thesis through writing, discussion, presentation, and critique, resulting in a thesis proposal document and in a public presentation for faculty feedback.

**ARTG 7910. Design Project and Exhibition. (4 Hours)**

Offers students an opportunity to focus on the design of pieces, artifacts, and experiences for the thesis exhibition. Includes planning and design of the exhibit. Situates the thesis contributions to design as project-based discipline. Discusses and reflects on the design process at the crossroads of methodological, systematic iteration, and creative exploration.

**Prerequisite(s):** ARTG 7990 (may be taken concurrently) with a minimum grade of B-

**ARTG 7986. Research. (0 Hours)**

Offers students an opportunity to conduct full-time research under faculty supervision.

**ARTG 7990. Thesis. (4,8 Hours)**

Offers students support in developing and producing the written component of a design thesis that integrates and applies their accumulated knowledge. Encourages student participation within a practice and research community consisting of classmates, advisor(s), and external professionals. Restricted to students in experience design and Information design and visualization.

**ARTG 7996. Thesis Continuation. (0 Hours)**

Offers students continuing thesis supervision by members of the department.