

NASAD Competencies Summary

Degree: BFA in Industrial Design, a professional undergraduate degree

Essential Note: Items below are excerpts from the NASAD Handbook. Items 1 through 6 indicate the content and natures of the competencies expected of those graduating with the above degree. Items 7 and 8 indicate recommendations for competency development.

Only the Handbook in its entirety contains all standards and guidelines applicable to and used by all phases of NASAD membership reviews. In the text below “H.” indicates the location of the excerpted text in the *Handbook*; the term “(All)” indicates standards applicable to all professional undergraduate art/design degrees including industrial design; “(Industrial Design)” indicates specific standards for that major.

Item 1. (All)

Common Body of Knowledge and Skills (H.VIII.B.)

1. **Studio.** Studies, practice, and experiences in studio subjects are of prime importance in the preparation of students for professional careers in art and design. The excellence of the creative work produced by students is the best determinant of the adequacy of the studio studies offered by an institution. Creative work includes, but is not limited to, conceptualization, process, product, and critique.

Irrespective of major or specialization, students must:

- a. Gain functional competence with principles of visual organization, including the ability to work with visual elements in two and three dimensions; color theory and its applications; and drawing.
- b. Present work that demonstrates perceptual acuity, conceptual understanding, and technical facility at a professional entry level in their chosen field(s).
- c. Become familiar with the historical achievements, current major issues, processes, and directions of their field(s).
- d. Be afforded opportunities to exhibit their work and to experience and participate in critiques and discussions of their work and the work of others.

Studio work normally begins at the freshman level and extends with progressively greater intensity throughout the degree program.

There should be opportunities for independent study at the advanced level that includes appropriate supervision and evaluation upon completion.

2. **Art/Design History, Theory, and Criticism.** Through comprehensive courses in the history of art/design, students must:
 - a. Learn to analyze works of art/design from both Western and non-Western cultures perceptively and to evaluate them critically.
 - b. Develop an understanding of the common elements and vocabulary of art/design and of the interaction of these elements, and be able to employ this knowledge in analysis.
 - c. Acquire the ability to place works of art/design in historical, cultural, and stylistic contexts.

In certain areas of specialization, it is advisable to require that students study the historical development of works within the specialization.

Normally, studies in art and design history and analysis occupy at least 10% of the total curriculum.

3. **Technology.** Students must acquire a working knowledge of technologies and equipment

applicable to their area(s) of specialization.

4. **Synthesis.** While synthesis is a lifetime process, by the end of undergraduate studies students should be able to work independently on a variety of art and/or design problems by combining, as appropriate to the issue, their capabilities in studio, analysis, history, and technology.

Item 2. (All)

Results (H.VIII.C.)

Upon completion of any specific professional undergraduate degree program:

1. Students must demonstrate achievement of professional, entry-level competence in the major area of specialization, including significant technical mastery, capability to produce work and solve professional problems independently, and a coherent set of artistic/intellectual goals that are evident in their work.
2. Students must demonstrate their competence by developing a body of work for evaluation in the major area of study. A senior project or final presentation in the major area is required.
3. Students must have the ability to form and defend value judgments about art and design and to communicate art/design ideas, concepts, and requirements to professionals and laypersons related to the practice of the major field. They are able to work collaboratively as appropriate to the area(s) of specialization.

Item 3. (Industrial Design)

Essential Competencies, Experiences, and Opportunities (H.X.E.3.)

(in addition to those stated for all professional degree programs in VIII.B. and C.):

- a. Ability to design products and systems including, but not limited to a foundational understanding of how products and systems are made; what makes them valuable; how they are developed, realized, and distributed; and how they are related to environmental and societal issues and responsible design.
- b. Ability to use technologies and tools associated with multi-dimensional design representation, development, dissemination, and application.
- c. Foundational knowledge of the history of industrial design including, but not limited to the influences of works and ideas on the evolution of design study and practice over time and across cultures.
- d. Fundamental knowledge of user experience, human factors, applied ergonomics, contextual inquiry, user preference studies, and usability assessments.
- e. Ability to research, define, and communicate about problems, variables, and requirements; conceptualize and evaluate alternatives; and test and refine solutions, including the ability to synthesize user needs in terms of value, aesthetics, and safety.
- f. Ability to communicate concepts and specifications in verbal, written, and multiple media at levels ranging from abstraction and sketches, to detailed multi-dimensional, functional, and visual representations.
- g. Functional knowledge of professional design practices and processes including, but not limited to ethical behaviors and intellectual property issues such as patents, trademarks, and copyrights.
- h. Knowledge of basic business practices and their relationship to industrial design, as well as the ability to investigate and reconcile the needs related to entrepreneurship, marketing, engineering, manufacturing, servicing, and ecological and social responsibility in the process associated with specific design projects.
- i. Acquisition of collaborative skills and the ability to work effectively in interdisciplinary or multidisciplinary teams.

- j. Opportunities for advanced undergraduate study in areas that intensify skills and concepts, and that deepen and broaden knowledge of the profession of industrial design.
- k. Experience in applying design knowledge and skills beyond the classroom is essential. Opportunities for field research and experience, internships, collaborative programs with professional and industry groups, and international experiences are strongly recommended. Such opportunities to become oriented to the working profession should be supported through strong advising.

Item 4. (All Professional Design)

Common Curricular Elements Incorporated in All Specific Professional Undergraduate Degrees in Design (H.X.A.6.)

Common critical elements in the strategic environment for design impact, are reflected, and are integrated differently in the work of various design specializations, and thus, in the realization of curricular programs to develop the student competencies required to begin professional practice in those specializations.

Specific detailed competency development decisions regarding these common elements are the prerogatives of institutions. However, to maintain fundamental curricular currency with developments in each field, each professional undergraduate program in design is expected to prepare students to understand and work with the following in terms of their area of specialization or focus.

1. **Context.** The role of the designer is not only to achieve the goodness of fit between form and context, but also to determine how much of the surrounding context will be considered as a specific design problem is addressed and solved. Basic competence in both framing and solving design problems is essential for graduates. In all design specializations, this competence includes knowledge of and ability to address the following:
 - a. *Usefulness.* The value of communication, objects, environments, or services to persons and society.
 - b. *Usability.* The cognitive or physical ease, efficiency, and satisfaction of people as they learn and use communication, objects, products, environments, systems, or services.
 - c. *Desirability.* The perceived emotional, social, or cultural benefits of communication, objects, products, environments, systems, or services.
 - d. *Sustainability.* The consequences of design in interdependent systems, lifespan of designed objects, and use and disposal of resources.
 - e. *Feasibility.* The technological ability to produce and/or disseminate and/or distribute communication, objects, environments, or services.
 - f. *Viability.* The economic potential and consequences, for example, for return on investment, economic sustainability, and growth.
2. **Complexity.** The context for design problem solving is increasingly complex and design activity is typically nested within a web of interconnected systems. Basic understanding of how such complexity is addressed and expressed in design practice is essential. Competencies include familiarity with:
 - a. *Trans-disciplinary/interdisciplinary collaboration.* Basic understanding of the nature, content, and process of trans/interdisciplinary work, including experiences working in trans-disciplinary teams toward the solution of design problems. To address critical aspects of the content component, where possible, curricula and courses should facilitate understanding of the relevance of knowledge in a variety of fields associated with addressing complex design issues and problems. Fields include the sciences, social sciences, humanities, and business, and other fields associated with various areas of specialization.
 - b. *Designing at the level of systems.* Basic knowledge of means for considering, evaluating, and

anticipating the consequences of design action in a variety of systems, even when working at the level of products and components. This competence is normally developed through studio and other studies and activities.

- c. *Geographic dispersal of effort.* Basic understanding of the management and labor structures and issues associated with the design, production, dissemination, and distribution of communication, goods, and services in the global context. Students should be encouraged to gain work experience in settings that represent a variety of economic and social opportunities.
 - d. *Issues of lifespan and sustainability.* Ability to justify the use of resources and identify long-term consequences of design action in their solutions to problems.
- 3. Designing for and with People.** Contemporary design practice addresses varying levels of responsibility between designers and users. For example, control for design decisions can shift proportionally from project to project and purpose to purpose. Knowledge and skills to understand and begin to work in this environment are essential. Competencies include the ability to:
- a. Choose and apply research and other methods for understanding various users' wants, needs, and patterns of behavior.
 - b. Recognize social, cultural, ability, and perspective differences on scales ranging from individual to global.
 - c. Consider and evaluate strategies for addressing or resolving competing values in the process of finding design solutions.
 - d. Work with issues and projects associated with participatory design and its processes.
- 4. Technology.** A rapidly evolving technological context presents both challenges and opportunities for design education. While the resources of institutions may limit how quickly programs can respond to industry changes in specific software and hardware, overarching knowledge and skills for working with the impact of technology on design are essential. Competencies include the ability to:
- a. *Learn how to learn technology.* Because change will be a constant, students' technological studies and experiences need to prepare them to learn new technologies on an ongoing basis.
 - b. *Make critical choices among different technologies.* Through various curricular studies and experiences, students are expected to become critical users of technology, able to match technological choices to specific problems and their respective contexts.
 - c. *Design tools and systems.* The democratization of technology places a greater burden on designers in certain specializations to invent the systems through which users create their own experiences. For students majoring in those specializations, competencies include basic understanding of the development of such systems and of the fundamental relationships between the invention of systems and the invention of technology. Experience in projects associated with the invention of technology, as well as its use, is strongly recommended.
- 5. Research.** Research is an integral component in designing for and with people in a context that encompasses complexity and technology. Research sensibilities and comprehensive capabilities are gained through study and practice over a lifetime. At the undergraduate professional degree level, basic understanding of research methods, and the ability to read and use findings in studio projects are essential. This competence includes basic knowledge and skills to develop research-supported design decisions for specific circumstances that address:
- a. What people want and need.
 - b. What is needed that does not exist.
 - c. How people learn and know.

- d. What particular contexts demand.
- e. How things get planned, produced, and distributed.
- f. The effects of design action on people, communities, the environment, and the future.
- g. Tools, theories, and methods for exploring these issues.

Item 5. (All Professional Design)

Common Essential Resource-based Opportunities and Experiences for All Students Enrolled in Professional Undergraduate Design Degrees (H.X.B.)

Institutions must provide the following in terms of each specific specialization or field of design it offers.

1. Easy access to studios appropriately equipped for teaching, learning, and work (see Standards for Accreditation II.F.).
2. Easy access to libraries with (a) appropriate design collections in the field of specialization, (b) resources that are current and appropriate to the specific curricula being offered, and (c) reference material in other relevant disciplines, such as the social sciences and the humanities (see Standards for Accreditation II.G.).
3. Easy access to tutorials that develop software and other technical capabilities (see Standards for Accreditation IV.B.1.).
4. Easy access to appropriately equipped labs and technological support necessary for the execution of design solutions (see Standards for Accreditation II.F.).
5. Continuous regular access to instruction and critique under faculty with educational and professional backgrounds in the area of design specialization. Instruction for the number of students enrolled, and sufficient numbers of qualified faculty to provide the diversity of expertise required for a comprehensive current education in the field of specialization (see Standards for Accreditation II.E.).

Item 6. (All)

General Studies Competencies (H.VIII.A.6.)

- a. **Competencies.** Specific competency expectations are determined by the institution. Normally, students holding a professional undergraduate degree in art and/or design are expected to have:
 - (1) The ability to think, speak, and write clearly and effectively, and to communicate with precision, cogency, and rhetorical force.
 - (2) An informed acquaintance with the mathematical and experimental methods of the physical and biological sciences and with the main forms of analysis and the historical and quantitative techniques needed for investigating the workings and developments of modern society.
 - (3) An ability to address culture and history from a variety of perspectives.
 - (4) Understanding of, and experience in thinking about, moral and ethical problems.
 - (5) The ability to respect, understand, and evaluate work in a variety of disciplines.
 - (6) The capacity to explain and defend views effectively and rationally.
 - (7) Understanding of and experience in art forms other than the visual arts and design.

Item 7. (Industrial Design)

Recommendations for General Studies (H.X.E.2.)

(See Item 6 above.) Studies in the physical and natural sciences, the social and behavioral sciences, quantitative reasoning, and the humanities are important for industrial designers. Students should be

able to make connections among these disciplines and their work in industrial design.

Item 8. (All)

Recommendations for Professional Studies (H.VIII.D.)

Students engaged in professional undergraduate degrees in art/design should have opportunities to:

1. Gain a basic understanding of the nature of professional work in their major field. Examples are: organizational structures and working patterns; artistic, intellectual, economic, technological, and political contexts; and development potential.
2. Acquire the skills necessary to assist in the development and advancement of their careers, normally including the development of competencies in communication, presentation, business, and leadership skills necessary to engage in professional practice in their major field.
3. Develop teaching skills, particularly as related to their major area of study.
4. Explore areas of individual interest related to art/design in general or to the major. Among the many possible examples are: aesthetics, theory, specialized topics in art/design history, analysis, and technology.
5. Explore multidisciplinary issues that include art and design.
6. Practice synthesis of a broad range of art/design knowledge and skills, particularly through learning activities that involve a minimum of faculty guidance, where the emphasis is on evaluation at completion (see Standards for Accreditation III.G.).

Please Note:

For specific information regarding curricular structure, see H.X.E.1. Normally, approximately 65% of a 120 semester hour program is in art/design studies to ensure that time is available to develop the requisite competencies.

For a table of contents for all standards, see [NASAD Handbook](#).