SECTION I: The most recent version of your mission, bulleted list of Program objectives, and bulleted list of Program outcomes and the year (tentative) you will measure. Every outcome should be measured at least once within five years. (This is intended to be a one-page mission/objectives/outcomes cheat sheet.)

MISSION
The professional BACHELOR OF INDUSTRIAL DESIGN degree program prepares students generally for entry into the practice of industrial design and provides a strong general education. Further, the faculty recognizes the obligations of teaching in a field that shapes the physical and social environment. In response to these obligations we seek to promote a respect for learning and creating, to impart a responsibility for decisions, to teach a respect for materials as resources, and to give our students the tools they need to deal successfully with the changes they will confront in their lives.

The curriculum in the BACHELOR OF INDUSTRIAL DESIGN degree program is consistent with professional standards for the practice of Industrial Design. Undergraduate admissions policies, mission, curriculum, and course definitions reflect the Department’s philosophy that in order to be of value as a professional, a designer must learn to use their entire intellect, along with developing the abilities of inventive form-making.

The curriculum for the Bachelor of Industrial Design articulates specific student outcomes in individual course outlines, while generalized objectives for the degree state that graduates of the program will be able to:

- Analyze problems and define problem variables and requirements.
  - Employ appropriate methods for solving problems, selecting strategies, and generating a range of innovative solutions that demonstrate the ability to meet the needs of users and manufacturers.
- Critically evaluate design solutions, and recognize and refine the desirable qualities of the most advantageous concepts.
- Make informed decisions regarding the selection of materials and manufacturing processes.
- Effectively use computer technology and relevant software programs.
  - Communicate effectively in visual, written, and oral presentations, and demonstrate the ability to analyze and evaluate the visual, written, and oral presentations of others.

COMPETENCIES
It is the belief of the Industrial Design faculty that graduating Bachelor of Industrial Design students demonstrate all essential competencies for Industrial Design, as documented in course syllabi; illustrated in examples of student work; and evidenced by the success of graduates in positions of responsibility in design offices and corporations around the country. Learning objectives match essential competencies (below in **BOLD**); detail where such objectives are measured; and articulate measures used to determine minimum levels of achievement by students in the program.

I. A foundational understanding of how products work; how products can be made to work better for people; what makes a product useful, usable, and desirable; how products are manufactured; and how ideas can be presented using state-of-the-art tools.

Students may not proceed to upper-level coursework without mastering required formative studio and service courses content, as well as foundational instruction covering user needs assessment, market analysis, product development and prototyping, and fabrication. In this way, faculty can guarantee that competency has been met, both through curricular requirements and by evaluative practices. Over the course of their studies, all Industrial Design students evidence the ability to generate multiple solutions to design problems through a variety of materials and processes, and are able to articulate connections between need, concept, and articulation for all proposed solutions. With this, all students demonstrate the ability to describe the role of context in the definition of design problems and predict outcomes of design solutions; the ability to describe design problem parameters that evidence analysis of user and production issues; and, ultimately, the ability to critically evaluate design solutions in terms of relevance to specific target users, the market and larger society. The Capstone Studio, taken in the last semester of the senior year, requires students to demonstrate this competency in self-defined and/or applied projects that tackle complex problems.

II. Knowledge of Computer-Aided Drafting (CAD), Computer-Aided Industrial Design (CAID), and appropriate two-dimensional and three-dimensional graphic software.

Electronic media are integral to most study in the program and matched to practices in the profession. With that, students are expected to develop over the course of their studies an understanding of tools and technology, including their roles in the creation, reproduction, and presentation of concepts and projects. Relevant tools and technologies include, but are not limited to, digital
drawing, digital photography, 2D and 3D digital modeling, rapid prototyping, manufacturing, and presentation and display for both print and screen. Dedicated work in a three-credit support course technology progression requires the mastery of technological tools in support of students’ formal development. Students purchase their own computers and software, and are technologically proficient by the middle of their junior year. While students understand computer technology as a tool, the program goes further to frame electronic media as a creative medium, as well as fabrication and presentation platform.

III. Understanding of the history of Industrial Design.

History and theory are taught in dedicated foundational first- and second-year courses (D100 DESIGN THINKING I and D102 DESIGN THINKING II; D102 DESIGN CULTURE AND CONTEXT I and D103 DESIGN CULTURE AND CONTEXT II; ID416 INDUSTRIAL DESIGN HISTORY), but the curriculum also integrates such study in core studio and support courses. Faculty deliver lectures as part of studio-based instruction and project briefs demand integration of theory and history. One other art/design history survey elective course is also required for all majors.

IV. Functional knowledge of basic business and professional practice.

Development of the student’s particular understanding of the context of Industrial Design in the corporate and business environment is specifically addressed in ID 262 Professional Practice in Industrial Design. This 3-credit seminar course examines issues and situations encountered in the various settings of industrial design practice. Topics include organizational structures, basic business/marketing strategies, patents, trademarks, copyrights, and contracts. The course also addresses the manner in which students approach companies for employment, and class time is allocated to the development of effective resumes and the student’s portfolio.

V. The ability to investigate and synthesize the needs of marketing, sales, engineering, manufacturing, servicing, and ecological responsibility and to reconcile these needs with those of the user in terms of satisfaction, value, aesthetics, and safety. To do this, industrial designers must be able to define problems, variables and requirements; conceptualize and evaluate alternative; and test and refine solutions.

Studio coursework frequently uses case studies, models of best practices, and specific methods for solving the complex problems as found and reflected in practice and industry. Students often work in collaborative teams; develop project definitions, research, and workflow patterns; produce, test, and refine prototypes and production models against stated criteria; deliver final work various presentation formats; and explore contemporary methods of design practice (such as conducting competitive market audits, engaging in ethnographic studies, authoring needs assessment statements and branding positions for proposed new products and services, etc.) In the capstone studio, seniors engage in discussions dedicated solely to the transition from school to work and examine a range of best practices, project types, and professional behaviors.

VI. The ability to communicate concepts and requirements to other designers and colleagues; to clients and employers; and to prospective clients and employers. This need to communicate draws upon verbal and written forms, two-dimensional and three-dimensional media, and levels of detailing ranging from sketch or abstract to detailed and specific.

Integral to all studio activities, upper-level coursework asks Industrial Design majors to demonstrate the ability to communicate ideas in various pertinent formats (printed, screen, and physical) at various stages of project development, as well as the ability to consistently throughout their studies to make formal presentations of their ideas and to respond critically and constructively to the work of others. These, in turn, inform and define all assessment opportunities for faculty and peers such class critiques, end-of-project presentations, end-of-semester reviews and student exhibitions. Moreover, through various applied studio activities, funded studio projects, service learning initiatives and high-profile student and trade competitions, students are also provided with ample opportunity to engage with and learn from clients, industrial design professionals, and industry partners.

VII. Studies related to end-user psychology, human factors and user interface.

Students engage human-centered design principles as they pursue research-based upper-level studio work and elective coursework in related disciplines. Students are reminded to see impacted users, as well as all other involved stakeholders, as key participants in every design problem. A student’s understanding of the capabilities, limitations, and variability of human physical and cognitive makeup is specifically addressed through the course ID445 HUMAN-CENTERED DESIGN. The course is an introduction to the spectrum of human physical and cognitive capabilities as they relate to user interaction with designed products and environments. Topics include an overview of anthropometrics and ergonomics, applications of functional limits and psychological factors in design, and the principles of Universal Design.

VIII. Opportunities for advanced undergraduate study in areas which intensify skills and concepts already developed, and which broaden knowledge of the profession of Industrial Design. Studies might be drawn from such areas as Engineering, Business, the practice and history of visual Art and Design, and technology, or interdisciplinary programs related to Industrial Design.
In studio, students often work on sponsored projects in a team approach, which simulates best working methods of professional practice. These projects are generally sponsored by nationally/ internationally recognized corporations and offer students the resources to undertake design challenges in the classroom and studio that involve the complete cycle of the design, engineering, and marketing of new products. Various other opportunities are also made available to Industrial Design students through frequent funded practicum studio work, market-driven cross-disciplinary research, extension and engagement (service learning) initiatives, and one-off and cyclical competitions.

IX. Opportunities for internships, collaborative programs, and other field experiences with industry groups.

Industrial Design students are encouraged to pursue internships starting in their junior year. The College and Department periodically publish a college-wide list of professional opportunities (freelance projects, jobs, competitions, etc.) for the benefit of our student body (currently enrolled undergraduate or graduate students). College listserv posts and/or targeted departmental e-mails typically reach students with a description opportunity/project at hand, contact numbers, and, whenever available/appropriate, fine-grain details such as conditions, time commitment, compensation, etc. If all stars align (scope, timing, and interest), opportunities published typically bring out a match within our majors. Matches “connect” professionals to student talent without the need for a for-credit arrangement between student and employer. Students can choose to either act as “free-agents” or engage our “for-credit” ID 495 INDEPENDENT STUDY framework; sees frequent sponsored/funded projects in upper-level coursework; and guides students in the pursuit of formal national and international competitions.

ASSESSMENT TOUCHPOINTS

The program also supports both a "DOUBLE MAJOR" and "MINOR" degree path option for students and a “for-credit” ID 495 INDEPENDENT STUDY framework; sees frequent sponsored/funded projects in upper-level coursework; and guides students in the pursuit of formal national and international competitions.

X. Participation in multidisciplinary team projects.

Multidisciplinarity is at the heart of our common-to-all students First Year Experience. First-year studios and service courses see freshman from all College of Design majors working together in a variety activities, assignments, and projects. Student work is jointly reviewed, assessed, and exhibited. Industrial Design majors, transitioning into a disciplinary degree path still continue to pursue cross-disciplinary and multidisciplinary course opportunities through open studio ("swing studios") and/or electives regularly offered at the College and sister departments. Later in the Industrial Design curriculum, junior level and above, students are again provided with further collaborative and multidisciplinary opportunities as unique studio projects often see the inclusion and participation of other majors.

Regular systematic evaluation of student performance and curricular effectiveness

The Department observes regular end-of-semester reviews of student work in each studio and studio-support class and evaluate the effectiveness of assignments towards promoting desired learning experiences and skill development. The Department also maintains a regular review of curricula to ensure updating, as necessary. To this end, the Department pursues the following:

- Syllabi collection (for all classes) and student studio work documentation (for all studio-based classes).
- Bi-weekly dedicated teacher meetings to review learning objectives and outcomes, discuss and refine lesson plans, and evaluate student performance.
- Periodic departmental meetings and beginning- and end-of-semester retreats with all faculty (full-time faculty with Curriculum Committee oversight).
- End-of-semester studio reviews (final critique, open studio pin-ups, and evaluations by faculty of class performance).
- Mid-Program Residency Reviews and End-of-Program Senior Exit Reviews (full portfolio reviews with evaluation by faculty of student performance).
- Periodic exhibitions (First Year and advanced-level studios, Mid-Program Residency Reviews, and Commencement Show).

Student evaluation of instruction
Finally, students evaluate the effectiveness of instruction in every course, every semester (NCSU’s ClassEval system). This procedure provides statistical summaries for faculty and administrators. Summaries tell faculty how they rank on a variety of items with respect to other colleagues in the Department and University mean.

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SECTION II: Report on the outcomes measured in 2011/2012, using the following template for each outcome. Each outcome measured can usually be summarized in one page.

<table>
<thead>
<tr>
<th>Program Outcome: II</th>
<th>Knowledge of Computer-Aided Drafting (CAD), Computer-Aided Industrial Design (CAID), and appropriate two-dimensional and three-dimensional graphic software.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Mapping:</td>
<td>First sophomore semester (onward), within required studio-support courses.</td>
</tr>
<tr>
<td>Method for Assessment:</td>
<td>Such as test questions (not grades), course project with rubric, survey, focus group, interview, document analysis, etc.</td>
</tr>
<tr>
<td>Population (Number):</td>
<td>Sophomore on up (course project with rubric; end of semester studio reviews); end of first semester Junior year (Mid-Program Residency Reviews); and graduating Seniors (End-of-Program Senior Exit Reviews).</td>
</tr>
<tr>
<td>Sample (Number and sampling method and (Response Rates):</td>
<td>Studio production deliverables (within specific course offerings); partial portfolio in exhibit, student self-reflective oral and written narrative, and faculty reviewers' oral and written evaluations (at Mid-Program Residency Reviews); and complete professional portfolio (in exhibit and digital counterpart: shorthand and website).</td>
</tr>
<tr>
<td>Implementation of method:</td>
<td>Department and faculty-implemented; overseen and run by faculty. Course project with rubric; end-of-semester studio reviews are open to all other faculty and guest lecturers and critics within major. Mid-Program Residency Reviews see participation (as reviewers) of all full-time faculty within major (w/ participation of guest lecturers, critics, and/or practitioners). End-of-Program Senior Exit Reviews open to all other faculty and guest lecturers/critics within major, and see participation of guest lecturers, critics, and/or practitioners.</td>
</tr>
<tr>
<td>Brief Summary of Results and Interpretation — please do not include all your data.</td>
<td>Increase demand for integrated technology instruction (i.e.: modules, demonstrations, TA support, etc.) to match evolving disciplinary definition concerning smart materials, modeling, and prototyping technologies (i.e.: 3D-modeling, 3D-printing, etc.).</td>
</tr>
<tr>
<td>Decisions:</td>
<td>Review of technology progressions (Material and Processes and Technology proper), mapping both exiting and (potentially) lacking technology-specific instruction. Respective/dedicated faculty working groups; welcoming of technology-savvy lecturers; and recruiting/hiring of instruction-ready Teaching Assistants to enrich technology progression courses.</td>
</tr>
<tr>
<td>Time Frame to Reassess:</td>
<td>Yearly.</td>
</tr>
<tr>
<td>Program Outcome(s): IV, VI, IX</td>
<td>Functional knowledge of basic business and professional practice. The ability to communicate concepts and requirements to other designers and colleagues; to clients and employers; and to prospective clients and employers. This need to communicate draws upon verbal and written forms, two-dimensional and three-dimensional media, and levels of detailing ranging from sketch or abstract to detailed and specific. Opportunities for internships, collaborative programs, and other field experiences with industry groups.</td>
</tr>
<tr>
<td>Course Mapping:</td>
<td>Junior-level (onward), with particular emphasis in first semester Junior studio and then exit Senior Capstone Studio. Also (Juniors on up), through Professional Practice and off-site Internship in Industrial Design elective course offerings.</td>
</tr>
<tr>
<td>Method for Assessment:</td>
<td>Mid-Program Residency Reviews and End-of-Program Senior Exit Reviews (partial and full portfolio reviews, respectively, of student performance with evaluation by faculty and guest lecturers, critics, and practitioners). Course project with rubric and end-of-semester studio/administrative reviews of Professional Practice and Internship performance (final critique, open studio pin-ups, and evaluations by faculty of class performance; and evaluations by practitioner, faculty supervisor/academic advisor, and Department, of internship experience outcomes).</td>
</tr>
</tbody>
</table>
SECTION III: Please identify at least two outcomes you will measure in 2012/2013, using the following template for each outcome.

Program Outcome: II

Knowledge of Computer-Aided Drafting (CAD), Computer-Aided Industrial Design (CAID), and appropriate two-dimensional and three-dimensional graphic software.

Course Mapping:
In which course(s) is it taught
First sophomore semester (onward), within required studio-support courses.

Method for Assessment:
Such as test questions (not grades), student product with rubric, survey, focus group, interview, document analysis, etc.

Student product with rubric, formal exhibit and presentation, student self-reflective oral and written narrative and faculty reviewers’ oral and written evaluations (at Mid-Program Residency Reviews); and complete exit professional portfolio (in exhibit and digital counterpart: shorthand and website); and production deliverables (Professional Practice and Internships).

Timeline:
Yearly.

Faculty or staff Responsible:
Undergraduate Program Coordinator (w/ studio and studio-support faculty)

Program Outcome(s): IV, VI, IX

Functional knowledge of basic business and professional practice.

The ability to communicate concepts and requirements to other designers and colleagues; to clients and employers; and to prospective clients and employers. This need to communicate draws upon verbal and written forms, two-dimensional and three-dimensional media, and levels of detailing ranging from sketch or abstract to detailed and specific.

Opportunities for internships, collaborative programs, and other field experiences with industry groups.

Course Mapping:
Junior-level (onward), with particular emphasis in first semester Junior studio and then exit Senior Capstone Studio. Also (Juniors on up), through Professional Practice and off-site Internship in Graphic Design elective course offerings.
<table>
<thead>
<tr>
<th><strong>Method for Assessment:</strong></th>
<th>Partial portfolio in exhibit, student self-reflective oral and written narrative, and faculty reviewers’ oral and written evaluations (at Mid-Program Residency Reviews); complete professional portfolio (in exhibit and digital counterpart: shorthand and website); and production deliverables (Professional Practice and Internships). Industry accounts, with pre-professional opportunity log and placement record.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Timeline:</strong></td>
<td>Yearly.</td>
</tr>
<tr>
<td><strong>Faculty or staff Responsible:</strong></td>
<td>Undergraduate Program Coordinator (w/ studio and studio-support faculty)</td>
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