

# Industrial Design (IDES)

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## Industrial Design (IDES) Courses

### School of Industrial Design

### Faculty of Engineering & Design

#### IDES 1000 [0.5 credit]

##### Theory and History of Design

The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes.

Also listed as ARCH 2006.

Lectures three hours a week.

#### IDES 1001 [0.5 credit]

##### Industrial Design Analysis

Various aspects of industrial design practice, including: the principles of product analysis; the object/context relationship; the role of the manufactured object; and design analysis from the perspective of the user, the maker and the designer.

Also listed as ARCH 2101.

Prerequisite(s): IDES 1000 (ARCH 2006).

Lectures three hours a week.

#### IDES 1300 [0.5 credit]

##### Projects IA

An introduction to the skills and processes of industrial design including drawing and sketching as an aid to design, basics of line, shape, ideation, and visualization, product drawing, presentation techniques, basic model making, studio equipment and practices, introduction to the design process.

Prerequisite(s): IDES 1000 (may be taken concurrently).

Lectures and tutorials two hours a week, studio four hours a week.

#### IDES 1301 [0.5 credit]

##### Projects IB

Further aspects of industrial design theory and practice, specifically those dealing with principle of product development and fundamentals of form and colour; case studies. Students will explore the design process with emphasis on creative problem-solving techniques and visual communication in design.

Prerequisite(s): IDES 1300.

Lectures and tutorials two hours a week, studio four hours a week.

#### IDES 2101 [0.5 credit]

##### Mass Production Technology A

Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. Influences and role of assembly, finishing, production tooling, and costing.

Precludes additional credit for IDES 2100.

Prerequisite(s): IDES 1000, IDES 1300.

Lecture and tutorials three hours a week, laboratory three hours a week.

#### IDES 2102 [0.5 credit]

##### Mass Production Technology B

Continuation of IDES 2101. Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed.

Precludes additional credit for IDES 2100.

Prerequisite(s): IDES 2101 or permission of the School of Industrial Design.

Lecture and tutorials three hours a week, laboratory three hours a week.

#### IDES 2105 [0.5 credit]

##### Computer Applications

Provides industrial design students with a working knowledge of design related 3D computer applications, as well as graphic manipulation and illustration software. Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.

Precludes additional credit for COMP 1004.

Prerequisite(s): IDES 1301.

Lecture and tutorials three hours a week.

#### IDES 2205 [0.5 credit]

##### Sensory Aspects of Design

An exploration of multi-sensory qualities derived from and designed into products to optimize sensory experiences. Visual, tactile, auditory, and other related design elements and principles that contribute to the product multi-sensory characteristics while adding meaning and emotional value. Precludes additional credit for IDES 2203.

Prerequisite(s): IDES 1001 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

#### IDES 2300 [0.5 credit]

##### Projects IIA

Principles of drawing and sketching used in the design process. Project topics include: sketching as a tool for problem definition; idea exploration and form development; rendering techniques and the communication of design concepts; basic physical modeling techniques as a complement to sketching and drawing.

Prerequisite(s): IDES 1001 and IDES 1301, or permission of the School of Industrial Design.

Lectures two hours a week, studio four hours a week.

**IDES 2302 [0.5 credit]****Projects IIB**

Introduction to the design principles associated with adapting products to an existing product semantic. Topics covered: principles of design, product semantics, design analysis, design synthesis, design evaluation, and modeling techniques. The design project(s) explore some or all of the design principles covered in the lectures. Prerequisite(s): IDES 2300 or permission of the School of Industrial Design. Lectures two hours a week, studio four hours a week.

**IDES 2600 [0.5 credit]****Ergonomics for Product Design**

Physical, biomechanical, environmental and cognitive issues. Displays, controls, workstations, tools and software interfaces are examined from scientific and practical perspectives.

Precludes additional credit for IDES 3600.

Prerequisite(s): PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures and discussion three hours a week.

**IDES 3104 [0.5 credit]****Exhibition Design**

The field of exhibition design is explored through lectures and case studies. Students undertake a preliminary exercise in display and exhibition design prior to the development and implementation of an exhibition; this normally involves the design of the School of Industrial Design's Annual Graduation Exhibition.

Prerequisite(s): IDES 2203 and IDES 2302 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

**IDES 3105 [0.5 credit]****Visual Communication and Package Design**

A survey of visual communication and package design principles relevant to industrial designers. It addresses product/brand definition and corporate identity through package design.

Prerequisite(s): IDES 2203 and IDES 2302 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

**IDES 3106 [0.5 credit]****Computer Applications in Design II**

Examination of complex product geometry utilizing 3D computer applications. Topics include spline, surface and solids construction, surface verification tools, and rendering tools and techniques. Workflow, robust design, reverse design techniques and 3D printing will be explored through exercises.

Prerequisite(s): IDES 2105.

Lecture and tutorials three hours a week.

**IDES 3202 [0.5 credit]****Adv. Studies in Form and Colour**

Students may continue the research and study encountered in IDES 2203, IDES 2300 and IDES 2302 by doing advanced research in the phenomena of form and/or colour and their communicative functions in products. Directed Study.

Prerequisite(s): IDES 2203 and IDES 2302 or permission of the School of Industrial Design.

Lecture and tutorials three hours a week.

**IDES 3300 [1.0 credit]****Projects IIIA**

This course is an introduction to the design principles associated with the evaluation and re-design of an existing product. Topics to be covered include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures.

Prerequisite(s): IDES 2203 and IDES 2302 or permission of the School of Industrial Design.

Lectures four hours a week, studio eight hours a week.

**IDES 3302 [0.5 credit]****Projects IIIB**

This course is an introduction to the principles of innovation as found in industrial design. Topics to be covered include: invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures.

Precludes additional credit for IDES 3301 (no longer offered).

Prerequisite(s): IDES 3300 or permission of the School of Industrial Design.

Lectures two hours a week, studio four hours a week.

**IDES 3305 [0.5 credit]****Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.

Prerequisite(s): IDES 2203 and IDES 2302, or permission of the School of Industrial Design.

Lectures, tutorials and laboratory three hours a week or equivalent.

**IDES 3306 [0.5 credit]****Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.

Prerequisite(s): IDES 2203 and IDES 2302, or permission of the School of Industrial Design.

Lectures, tutorials and laboratory three hours a week or equivalent.

**IDES 3502 [0.5 credit]****Contextual Nature of Products**

Cultural subjects which have an influence on contemporary industrial design. The perspective of the course is anthropological: the context and cultural relevance of industrial design.

Precludes additional credit for IDES 3500.

Prerequisite(s): IDES 1000 (ARCH 2006).

Lectures and tutorials three hours a week.

**IDES 3503 [0.5 credit]****Professional Practice**

The organizational aspects of consultancies and client responsibilities within the framework of corporate management. Topics include: the form of contracts for consultancy, determination of fees, legal implications, patents and copyrights. Guest lecturers.

Precludes additional credit for IDES 4000.

Prerequisite(s): IDES 3300 or permission of the School of Industrial Design.

Lectures and discussion three hours a week.

**IDES 3601 [0.5 credit]****Industrial Design and the User**

Design methodology and the value of scientific methods for data collection and decision-making. Techniques such as interviewing, focus groups, usability testing, brainstorming, and value analysis will be covered.

Teamwork techniques and values are considered.

Prerequisite(s): IDES 2600.

Lectures three hours a week, laboratory three hours a week.

**IDES 3999 [0.0 credit]****Co-operative Work Term****IDES 4001 [0.5 credit]****Industrial Design Seminar**

Each year a special topic is chosen to be elaborated on and discussed. The topics deal with problems in the relationship of industrial design to other disciplines or problems regarding the theoretical aspects of industrial design itself.

Prerequisite(s): IDES 3301.

Seminar three hours a week.

**IDES 4101 [0.5 credit]****Adv. Studies in Manufacturing**

Directed study in the field of manufacturing, centred on such topics as: cost analysis, new materials and processes, computer aided manufacturing, numerically controlled machining, machining of moulds, etc.

Prerequisite(s): IDES 2101 and IDES 2102.

**IDES 4200 [0.5 credit]****Form Organization**

Using form organization as a tool to design, the definition and prescription of monolithic solids by means of an abstract system; making and verifying materialized approximations of such solids.

Prerequisite(s): IDES 2300 and IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials and laboratory six hours a week.

**IDES 4301 [0.5 credit]****Minor Projects A**

Enables students to demonstrate through a series of short projects their versatility in product design or in complementary design fields such as communication, graphic design or design experiments. Emphasis is on time management and the ability to work independently on assigned projects.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures and tutorials two hours a week, studio four hours a week.

**IDES 4302 [0.5 credit]****Minor Projects B**

The application of required skills and team work in a comprehensive design project. The subject matter deals with broad issues in design.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures and tutorials two hours a week, studio four hours a week.

**IDES 4305 [0.5 credit]****Special Studies**

Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite(s): fourth-year registration or permission of the School of Industrial Design.

Lectures, tutorials and laboratory three hours a week or equivalent.

**IDES 4306 [0.5 credit]****Special Studies**

Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite(s): fourth-year registration or permission of the School of Industrial Design.

Lectures, tutorials and laboratory three hours a week or equivalent.

**IDES 4310 [1.5 credit]****Major Project**

Application of design principles in a comprehensive design project. Problem area chosen should be product oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and industry; supervised by faculty members.

Precludes additional credit for IDES 4300 (no longer offered).

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures and tutorials two hours a week, studio ten hours a week.

**IDES 4400 [0.5 credit]****Internship Field Report**

Work experience related to industrial design. Following the internship period (12 weeks minimum), a comprehensive report describing observations and insights must be submitted by the end of the fourth week of the fall term.

Graded Sat or Uns.

Prerequisite(s): IDES 3300 or permission of the School of Industrial Design.

Tutorial hours arranged.

**Summer session:** some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at [central.carleton.ca](http://central.carleton.ca)

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at [central.carleton.ca](http://central.carleton.ca)