

# Industrial Design (IDES)

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## Industrial Design (IDES) Courses

### **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**

Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment.

Includes: Experiential Learning Activity

Also listed as ARCH 2101.

Prerequisite(s): IDES 1000 or 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.

Includes: Experiential Learning Activity

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

Studio and lectures six hours a week.

### **IDES 1301 [0.5 credit]**

#### **Projects IB**

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

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1300.

Studio and lectures six hours a week.

### **IDES 2101 [0.5 credit]**

#### **Series and 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.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1001, IDES 1301.

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

### **IDES 2102 [0.5 credit]**

#### **Series and 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.

Includes: Experiential Learning Activity

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.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301.

Lecture and tutorials three hours a week.

### **IDES 2205 [0.5 credit]**

#### **Sensory Aspects of Design for User Experience**

An exploration of multi-sensory qualities derived from and designed into products to optimize product-interaction experiences. Visual, tactile, auditory, and other related sensory aspects of design and design principles that contribute to the product multi-sensory characteristics while adding meaning and emotional value.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 2203 (no longer offered).

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 design sketching used in the industrial design process. Topics include: sketching as a tool for problem definition; idea exploration and form development; rendering techniques and the communication of design concepts; basic physical prototyping and modeling-making techniques.

Includes: Experiential Learning Activity

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

Studio and lectures six 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.

Includes: Experiential Learning Activity

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

Studio and lectures six hours a week.

**IDES 2600 [0.5 credit]****Human Factors/Ergonomics in Design**

Foundation course in human factors/ergonomics providing an overview of physical and cognitive considerations in product design and related design fields. Anthropometrics, biomechanical considerations, cognition, social interaction, and emotional interaction are introduced in relation to supporting user experience, health and safety, performance and productivity.

Includes: Experiential Learning Activity

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.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 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. Product/brand definition and corporate identity through package design.

Includes: Experiential Learning Activity

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

Lectures and tutorials three hours a week.

**IDES 3106 [0.5 credit]****Advanced Computer Applications**

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.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2105.

Lecture and tutorials three hours a week.

**IDES 3107 [0.5 credit]****Design and Sustainability**

Explores the industrial designer's role in creating more environmentally and socially responsible products.

Addresses imperatives and drivers for integrating sustainability into products. Includes: sustainable design strategies, strategies and tools, sustainable design business case, circular economy model for designed products, and case studies.

Includes: Experiential Learning Activity

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

Lectures and tutorials three hours a week.

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

Students may continue the research and study encountered in IDES 2205, 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.

Includes: Experiential Learning Activity

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

Lecture and tutorials three hours a week.

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

Introduction to the principles of innovation as found in industrial design. Invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

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

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Studio and lectures six 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 2302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio 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 2302 or permission of the School of Industrial Design.

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

**IDES 3310 [0.5 credit]****Projects IIIA**

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

Includes: Experiential Learning Activity

Precludes additional credit for IDES 3300 (no longer offered).

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

Studio and lectures twelve hours a week.

**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.

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

Lectures and tutorials 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.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2600.

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

**IDES 3999 [0.0 credit]****Co-operative Work Term**

Includes: Experiential Learning Activity

**IDES 4001 [0.5 credit]****Industrial Design Seminar**

Topics vary yearly and address key contemporary industrial design issues. There is a focus on writing, discussion, and debate. Students organize a seminar with design professionals and other community experts including student and professional presentations, interaction, and discussion.

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

Seminar three hours a week.

**IDES 4002 [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 3503 (no longer offered).

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Lectures and discussion 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.

Includes: Experiential Learning Activity

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.

Includes: Experiential Learning Activity

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.

Includes: Experiential Learning Activity

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

Studio and lectures six 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): IDES 3302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio 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): IDES 3302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio 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.

Includes: Experiential Learning Activity

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

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

Studio and lectures six hours a week in Fall and twelve hours a week in Winter.

**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.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Tutorial hours arranged.