Curriculum examples

Year one

Contents

Workshop Practice

Karl-Axel Andersson

Since the dawn of mankind, people have been producing artefacts. Despite the digitalisation development, we think that basic workshop training and the corresponding model building is an essential tool in the design process. It is hard to beat the direct response of experimenting in different materials and forms as well as trying out new construction principles. The joy and strengthening of self-confidence in being able to produce something by one's own hands is of great importance. Therefore, the workshop course is one of the first given and the main aim is to make the students familiar with safe operation methods of the common workshop machinery like a lathe and a milling machine.

Workshop, Form, Shape and Expression

Joe Ballay, Joshua Murray

Systematic morphology is a way of thinking about three-dimensional form, particularly attuned to the skills, needs and methods of industrial design students. At LTH, this workshop takes typically two weeks, in the second or third semester so that the students gain some basic model-making skills beforehand.

The First Week – Four Forms in Five Days

We begin by experimenting with four basic families of form; a kind of simple vocabulary. The number of families and their definitions are somewhat flexible, but there are four that make a nice set to work with. I call them: Orthoform, Rotoform, Flowform, and Growform. Each family derives from a particular generative process, or underlying geometry, or other systematic way of thinking about material, force and form. But to achieve subtlety in any family requires intuitive judgment too.

Orthoforms derive from rectilinear or orthogonal relationships among edges, planes and volumes. Rotoforms are forms of revolution, usually with a strong axis. Flowforms express the supple movement of a surface in a medium like water or air. Growforms can be thought of as enclosed membranes, stretched into shape by a combination of internal pressure and external boundaries, like the biomorphic forms of growth.

Each family is reasonably distinct, each suggests different techniques to draw and model it, and each parallels one of the basic form generating techniques embodied in computer modelling.
One of the form families is assigned each day, usually with a particular objective such as to "break the axis of the rotoform". It's an intense, hands-on, experience that stresses rational and intuitive ways of thinking about form and making form decisions. For each, the expectation is "a simple form, done exceedingly well". The fifth day is for finishing unfinished work, and all four forms are due the next Monday.

The Second Week – Pseudoproducts

Now we ask whether we can use this form vocabulary to say something about the function, intention, or attitude of a product form. But we don't work on actual products, which involve technological, economic, and cultural constraints that complicate our brief and basic study of form. Instead, I devised "pseudoproducts" to reduce these distractions yet leave some content and substance for the designer to work with. A pseudoproduct has some of the qualities of a product without actually being a product. It looks like it functions without saying how it works. It implies the movement or interlocking of parts. It projects an attitude of power, elegance, security or novelty.

For the LTH workshops, the students were asked to design and model a pseudoproduct, combining two of the four form families. They could choose one of seven such products, defined only in terms of its basic function:
It twists or applies torque
It pumps or causes flow
It locks or makes secure
It heats or makes warm
It measures or meters
It squeezes or compresses
It inserts or injects
Initially there is some literalism, e.g. wanting to turn #1 into an electric drill, or #2 into a fireplace bellows. Once beyond that, the students deal fluently with abstract form concepts. The results are, as always, surprising and satisfying.

Elements for an Industrial Designer, part 1

Zenit Design Group

1

The purpose of this course is to initiate our students to their future profession. For most of them, it is the first opportunity to dip their toes into the water; acquiring new skills whilst working on their first industrial design project.

From an organisational point of view, they begin with freehand sketches, progress on to 2D computer drawings, create mock-ups along the way – and finish with a proper hard model, accompanied by a visual and oral presentation.

In other words, students are exposed to the design process – although a shortened one – to learn the fundamental aspect of designing: successful communication of ideas and their development.

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1/ Kungen, portable DAB radio, 2004 2/ Bluebird, digital camera with docking station, 2001 3/ Digital camera, 2001

Elements for an Industrial Designer, part 2

Olof Kolte

Karl-Axel Andersson

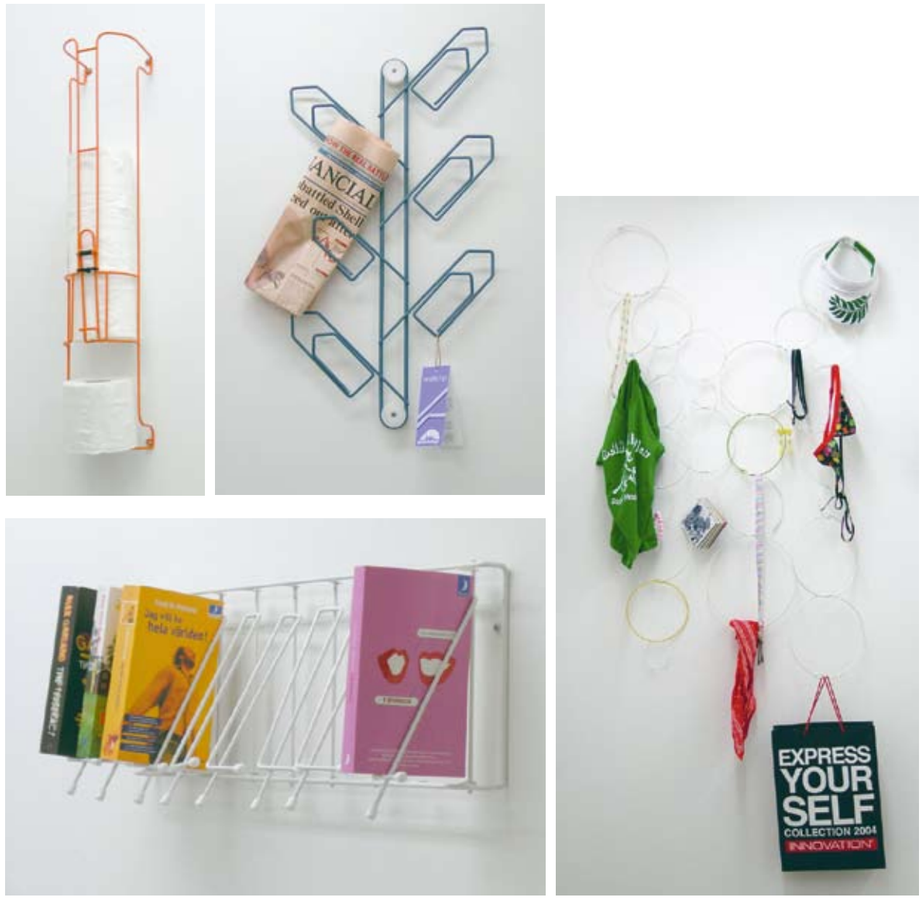
1

Developing something new that did not exist before is not easy. There are no set rules to follow. In this first “creative” project, which is a continuation of the course “Elements for an Industrial Designer, part 1”, we use the knowledge in building sketch models and prototypes to verify and communicate the result of the project.

Creativity cannot be taught, however, by getting used to confronting complex problems. By positioning yourself in a “creative state of mind”, being open to influences and making associations beyond the obvious, you can establish a “creative process” that can help you overcome the insecure, and sometimes frustrating nature of navigating unknown territory. Each and every creative process is as individual and complex as the operation of each and every one’s brain.

To collect necessary information, compile that information, establish the hierarchy of importance of many contradicting requirements and to determine the final product or concept and its appearance, is an activity that cannot be assigned to any machine, not even a computer with infinite capacity.

The focus of this project is different every year. We have done steel wire products for MUJI, Japan and MAZE, Stockholm, fabric products and small furniture for compact living. And to help us get into that creative state of mind each year, we do short workshops with several creative guests.



2004, Wire project, MUJI

Naoko Jano (MUJI)

Clay Ketter

Tim Parson

Shideh Shaygan

The task was to develop a full scale prototype with packaging and graphics that could fit into the product portfolio of MUJI and that was ready to be put on the shelf in any MUJI store. Naoko Yano, working for MUJI participated in the project.

1/ 2003, Klein Möbel project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2005, Fabric
Isa Glink
Anna Hansson
Johannes Norlander

Fabric has been around since the early days of civilisation, used in clothing, packaging, for carrying devices, for storage and many other things. At first natural fibres from animals skins such as from lamb, alpaca, camel, from plants such as cotton, linen, hemp and from insects, silk. Nomad cultures used it for constructing shelter that was easy to wrap up and transport. Sails made it possible to travel fast by sea to new continents.

More recently, synthetic fibers have been introduced and extended the field of application for fabric; sophisticated properties can be added through advanced technology and processes. The task was to develop and build a full-scale prototype of a fabric-based product. The product should have an obvious result to be decided by the student. The fabric itself should have an original expression that is easy to reproduce with existing technology in a rational manner. The product should have an extension in space, i.e. be three-dimensional. It should be packaged in a purpose-made container of fabric. The size of the container should not exceed what is possible to carry on public transport. Instructions of how to assemble and use the product should be provided. Anybody without any prior information or knowledge about the concept/project/product should be able to understand it.

The material to be used was mainly fabric with other necessary materials to provide additional structure and detailing to make the product work. It should be possible to produce the product in large numbers at a reasonable cost. The following should also be considered: efficient use of material, transport volume, assembly/mounting and sustainability

1/ Crime safe handbags with cable locks and gun prints as an indicator 2/ Confidence booster for cats and dogs 3/ Martin Luther: A result from the inspirational embroidery workshop with Anna Hansson 4/ Collapsible fabric barbecue


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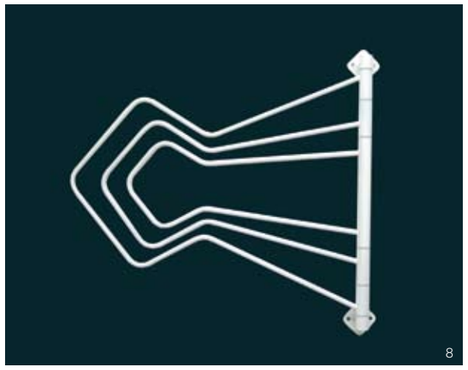
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2006, Compact Living
Peter Johansson
Christian Hasemauer

By 2030, more than 60% of the world's population will live in cities according to a study by United Nations Human Settlements Programme (UN-HABITAT). This trend is equivalent to the addition of a city of one million residents every week. It took 130 years for London to grow from one to eight million inhabitants, for Seoul it has only taken 25 years.

To create small spaces to live in that cater to all our daily needs will be much asked for in the future. Inspiration can be found in caravans, boats, spaceships, airplanes and other places where the efficient use of space is asked for.

The task is to develop and build a full-scale prototype of a product that will be of use when forced to live in a very small space.
The product shall have an obvious result to be decided by the student. It shall be easy to reproduce with existing technology in a rational manner. The product shall have an extension in space, i.e. be three-dimensional. It should be stored in purpose-made packageing. The size of the container should not exceed what is possible to bring on public transport. Instructions of how to assemble and use the product shall be provided. Anybody without any prior information or knowledge about the concept/project/product should be able to understand it.

5/ Stuck, a wall-mounted hanger for your shoes 6/ Efficent storage and drying stand for the kitchen 7/ A shower curtain with pockets for shampoo bottles and soap 8/ Wall-mounted towel rack 9/ Pung, an elastic wall mounted laundry bag that expands with the amount of dirty clothes

Theoretical and Applied Aesthetics

Lars-Henrik Ståhl

Theoretical and Applied Aesthetics, Visual Communication Ability

Mats Hultman

Courses in aesthetics or aesthetic related courses were always important components in both traditional and avant-garde oriented design educations. In some schools, it was more or less a central theme. The concept of aesthetics is nevertheless not an unchanged entity. For many years one has no longer been able to confidently claim aesthetical values without also considering contextual aspects. This change might best be described as a shift from the question “what is beauty?” to “how can we discuss sensational qualities, and what is the background for such discussions?”. It’s significant for the set of courses given in the field of Theoretical and Applied Aesthetics to consider this shift in a two-folded way: by providing practice-based courses where qualities such as shape, colour or appearance are elaborated, but also highlight contextual aspects on, above all, contemporary design. Courses in Theoretical and Applied Aesthetics are offered in years one through four starting with Visual Communication Ability in the first year.

The course Theoretical and Applied Aesthetics – Visual Communication Ability mainly aims to train the ability for visual communication by training the students’ ability to draw and observe. While drawing real objects, like in sketch exercises with live models, the ability to look closely at things, really seeing them, is sharpened. In addition to the drawing exercises, the course also includes a project where an artistic design of some sort is added to an existing public place. The project is presented in sketches and models, and thus it trains creativity and artistic skills together with the ability for visual communication.

Kitchen in Progress

Jürgen Usinger

The global village

Today, in a globalised world, we face the challenge of intercutural didactics and design language. Global enterprises emphasise their corporate environmental and social responsibility as a sign of their competitiveness and to demonstrate that they are working in the context of sustainable life supporting systems.

Products are evaluated according to their environmental and social impacts; this incorporate forms, materials, smells, noises, and/or surfaces that reflect a newly evolving accentuated trend across all cultural levels. Regional (e.g. European) and global trade harmonisation efforts provide additional political impetus. Global environmental agreements such as the UN Framework Convention on Climate Change (UNFCCC) are starting to be seriously considered by market opinion leaders. “Resource conservation” is the slogan of the hour.

Designers’ corporate demands

More than ever, integrated understanding and thinking becomes an indispensable skill of industrial designers and forms an essential part of the long-term marketing strategy of their businesses. Positive impacts of such strategies are equally motivating for customers and employees and consolidate economic robustness of enterprises.

Product designers working in such environments need first of all to be receptive and open for other perspectives. It is impossible to purely adapt one’s own cultural experiences. On the other hand, global culture is such a varied issue that it is impossible to reflect all ethnic manifoldness.

Foreign localisation

The project-based lecture “Kitchen Making Sense”, incorporates elements of various training techniques such as focusing, structural dynamics and moderated group learning. It provides orientation in developing an intuitive understanding of foreign environments through the reflected use of the human senses. First year students are asked to design objects for an environment that is as remote as possible from their own cultural experience.

After discovering their own limitations, they acquire techniques to work “below the surface”. Using methods of structural analysis students identify situation-specific requirements of systems, processes and environments and include them in their design concept. All exercises are strictly organised as team work to avoid early individual identification with a designed object and to distract from premature conclusions and perceptions. It helps to keep up receptiveness during role plays and practical exercises.

Concept of sense and meaning

Thematically the course is centred around scenarios of daily life situations in extreme environments found among foreign cultures in Asia, Africa or Latin America, such as the life in an Ethiopian village in the dry zone of Tigray or the situation of refugees in the highlands of Waziristan near the border to Afghanistan. In the last six training seminars, students have produced almost 40 different large and small scale household appliances for heating, cooking, lighting, smoking, drying, baking and frying.

Rather than applying a concept of values, students are encouraged to discover associations and meanings and vary in their analysis between prognostic and diagnostic approaches. The envisaged environment is explored in all its aspects, including natural science, sociology, energy use, economy, psychology, aesthetics, ethics (religion) and other aspects.

Implicit knowledge and creative process

The use of existing technologies and processes facilitates an intuitive understanding of peripheral aspects of the design exercise. Archaic elements such as water, mud/clay, iron, stone, wood and natural foods are common historical denominators to all cultures and are ideally suited to be used for such training. In our effort to understand foreign cultures it is often helpful to feel the roots of our own culture. Fire, smoke, steam and the haptics of rudimentary materials and objects stimulate implicit personal associations and sense of a variety of “meanings” that help to understand traditional societies situated in extreme environments.

Combined application of implicit and conscious knowledge provides effective orientation and confidence in the identification of essential needs for solving complex situations.

1/ Clay stove for central hearth with tin can chimney 2/ Cooking furnace made out of clay 3/ Ethnic dishes cooked on the finished ovens and stoves

History of Design

Helene Fuchs
Torsten Weimarck

To give a course in the History of Design from humanistic and art-historical points of view for the students of the Industrial Design Programme has always been on the wish-list of both the design students and the Department of Art History at Lund University. During a couple of terms some years ago my colleagues and I were invited to give occasional lectures on design theory and history from an art-historical perspective, until finally, in 2002, a whole design history course (three college credits) was introduced, compulsory for the students of the ID Programme. It was given for the first time in 2002 and is since compulsory for first year students.

The aim of the course is to obtain surveyable knowledge of the history of design through a series of lectures with the support of some reference books as a useful theorethical base. Industrial design and related themes, with their connections to the visual culture as a whole, is mainly focused on. There is an emphasis on industrial design as a visual and plastic expression of social history and style, technical and industrial development, as well as fashion. Here, design appears as a “bold creator of attitudes” to life and feelings/experiences of reality, too. Different gender aspects of design are of particular interest here to develop creative insights among the students. The students learn about different contemporary design cultures and strategies together with the thinking, description and interpretation of the processes used in design and of the designed objects themselves. The history of the role of the designer is a given theme. Special attention is drawn to the user experience.

Also, to a lecturer of art theory it is very stimulating to meet the IKDC group of students and make some contribution to the reconciliation of humanistic and artistic-technological subjects.

Inspiring Introduction to Industrial Design

Despina Christoforidou

Inspiring Introduction to Industrial Design
A series of guest lectures, occasional field-trips and workshops. The aim is to introduce the students to their future profession through meetings with designers and inspiring persons from neighbouring disciplines like art, architecture, communication, design, research, etc.

The focus lies on the different aspects of the design process. Leading designers, artists, scientists and cultural personae participate as guest lecturers and workshop leaders. The lectures are followed by discussions on current issues of industrial design.

During the course, the students become aware of the differing roles the design profession has to offer and the relations to other professions. They engage in discussions regarding design; question and reflect on their profession and differentiate between the various roles available in design. In addition, the inspiring lectures provide an informal platform to obtain interesting contacts within the design field.

External Lecturers

Göran Ahlström, Professor, Department of Economic History, Lund University School of Economics and Management, Lund, Sweden.
Lena Anderson, Interior Designer, Stockholm, Sweden.
Olle Andersson, White Design, Gothenburg, Sweden.
Joe Ballay, Industrial Designer, Professor Emeritus Carnegie Mellon, U.S.A.
Maria Benktzon, Professor, Industrial Designer, ErgonomiDesign, Stockholm, Sweden.
Jonas Blanking, Industrial Designer, Blanking Design, Malmö, Sweden.
Olle Bobjer, Ph.D. Industrial Design, MSc Ergonomics, ErgonomiDesign, Stockholm, Sweden.
Anna Bodestig, Car Designer, Scania, Södertälje, Sweden.
Lasse Brunnström, Co-opted Professor, School of Design and Crafts (HDK), Gothenburg, Sweden.
Anna Carell, Industrial Designer, Ergonomidesign, Stockholm, Sweden.
David Carlson, Design Manager, David Design, Skanör, Sweden.
Edwin Datschefski, Biologist, Environmental Management, BioThinking International, London, U.K.
Robin Edman, CEO Svensk Industridesign – SVID, Stockholm, Sweden.
Annika Eliasson and Jenny Nordberg, Industrial Designers, BergBerg, Malmö, Sweden.
HC Ericsson, Graphic Designer, Professor, School of Design and Crafts (HDK), Gothenburg, Sweden.
Per Eriksson, Architect, Innovative Design, Chalmers, Gothenburg, Sweden.
Madlein & Stefan Fallgren, Textile Design, Saldo Form & Communication, Huaröd, Sweden.
Roman Gebhard and Tad Toulis, Industrial Designers, Design Raw, San Francisco, U.S.A.
Isa Glink, Design Manager, Kinna Sand, Hamburg, Germany.
Ann Granberg, Industrial Designer, Nya Perspektiv Design AB, Gothenburg, Sweden.
John Grieves, Industrial Designer, ErgonomiDesign, Stockholm, Sweden.
Jenny Gärtner, Industrial Designer, Artist, Helsingborg, Sweden.
Torsten Halén, Bachelor of Law, Swedish Union for Copyright SFU, Stockholm, Sweden.
Jan Hampf, Designer, Hampf Industridesign, Särö, Sweden.
Anna Hansson, Architect & Textile Designer, Malmö, Sweden.
Mia Hesselgren, Design Manager, Ytterborn & Fuentes, Stockholm, Sweden.
Leif Huff, Head of Design, IDEO, Munchen, Germany.
Ehlén Johansson, Industrial Designer, Pelikan Design, Copenhagen, Denmark.
Peter Johansson, Artist, Malmö, Sweden.
Sven-Erik Juhlin, Industrial Designer, ErgonomiDesign, Stockholm, Sweden.
Clay Ketter, Artist, Lilla Uppåkra, Sweden.
Johannes Kiessler, Industrial Designer, Milano, Italy.
Per-Olov Landgren, Industrial Designer, Director of Studies HDK, Gothenburg, Sweden.
Johan Lindau, Furniture Designer, Blå Station, Kristianstad, Sweden.
Jonas Lindvall, MFA Furniture and Interior Architect, Lindvall A&D, Malmö, Sweden.
Linda Lissola, Industrial Designer, Zenit Design Group, Malmö, Sweden.
Björn Kussofsky, Graphic Designer, Stockholm Design Lab, Stockholm, Sweden.
Fredrik Magnusson, Designer, Propeller Design, Stockholm, Sweden.
Rune Monö, Industrial and Graphic Designer, Professor of Semiotics, University College of Arts Crafts and Design, Stockholm, Sweden.
Eva and Peter Moritz, Industrial Design and Arts & Crafts, Moritz Design, Lund, Sweden.
Skotte Mårtensson, Senior Lecturer, Electro Science, Manager of Centre for Technolution, Faculty of Engineering (LTH), Lund University, Sweden.
Stina Nilimaa-Wikström, Industrial Designer, Electrolux AB, Stockholm, Sweden.
Birgitta Nilsson, Ergonomist, STFI Packforsk, Stockholm, Sweden.
Johannes Norlander, Architect, Designer, Stockholm, Sweden.
Malin Orebäck, Industrial Designer MFA, MBA Design Management, ErgonomiDesign, Stockholm, Sweden.
Mikael Pawlus, Industrial Designer, Caran Design, Malmö, Sweden.
Johan Persson, Design Manager, NOPICNIC, Stockholm, Sweden
Ludwig Qvarnström, Doctoral Candidate, Department of Art History, Uppsala University, Sweden.
Nirvan Richter, Architect, Furniture Designer, Norrgavel, Malmö, Sweden.
Mårten Rittfeldt, Industrial Designer, Zenit Design Group, Malmö, Sweden.
Maria Schmidt-Larsson, Industrial Designer, IndustriDesign MSL, Gothenburg, Sweden.
Shideh Shaygan, Interior Designer, Shaygan arkitektkontor, Stockholm/London, Sweden/U.K.
Lisbeth Svengren-Holm, University Lecturer, Design Management, School of Business, Stockholm University, Sweden.
Stephan Söderholm, Designer MSD, Semcon Design, Gothenburg, Sweden.
Johan Ullman, Physician, Inventor, Ullman Human Design Group AB, Gothenburg, Sweden.
Ulrika Vejbrink, Industrial Designer MFA, ErgonomiDesign, Stockholm, Sweden.
Oliver Vogt, Vogt+Weizenegger, Berlin, Germany.
Nils Westerlund, Technical Communicator, Semcon, Lund, Sweden.
Birgit Åkesson, Dancer, Choreographer, Stockholm, Sweden.
Kenneth Österlin, Industrial Designer, Designer SID, Designkonsulterna, Gothenburg, Sweden.

Internal Lecturers

Karl-Axel Andersson, Industrial Designer, Lecturer, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden.
Sybs Bauer, Industrial Designer, Senior Lecturer, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden.
Claus-Christian Eckhardt, Industrial Designer, Professor, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden.
Bodil Jönsson, FD, Professor, Rehabilitation Engineering, Certec LTH, Lund University Sweden.
Thord Kjellström, Designer, Lecturer, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden.
Olof Kolte, Industrial Designer, Lecturer, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden.
Per Liljeqvist, Industrial Designer, Lecturer, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden.
Lena Sperling, Assistant Professor, Division of Industrial Design, Faculty of Engineering (LTH), Lund University, Sweden