

UNDERGRADUATE DEGREE

# TRANSPORTATION DESIGN

Study Plan



Formula Student, Mariano Suñé in collaboration with UPC.

# TRANSPORT DESIGN

## Undergraduate Degree

Official University Degrees lasting four years (240 ECTS).

IED Barcelona offers four-year Undergraduate Degrees in Design which are equivalent to University Degrees (240 ECTS) with the aim of transforming passion, talent and creativity into knowledge and skills that will enable future design professionals to develop their careers in the world of Design, Fashion, Visual Communication and Management.

**+100 nationalities**

**50 years of experience**

**100% worldwide network**

**11 centres all over the world**

**10,000 students every year**

**+1000 agreements with companies**



## GENERAL INFORMATION

**Language:** Spanish and English

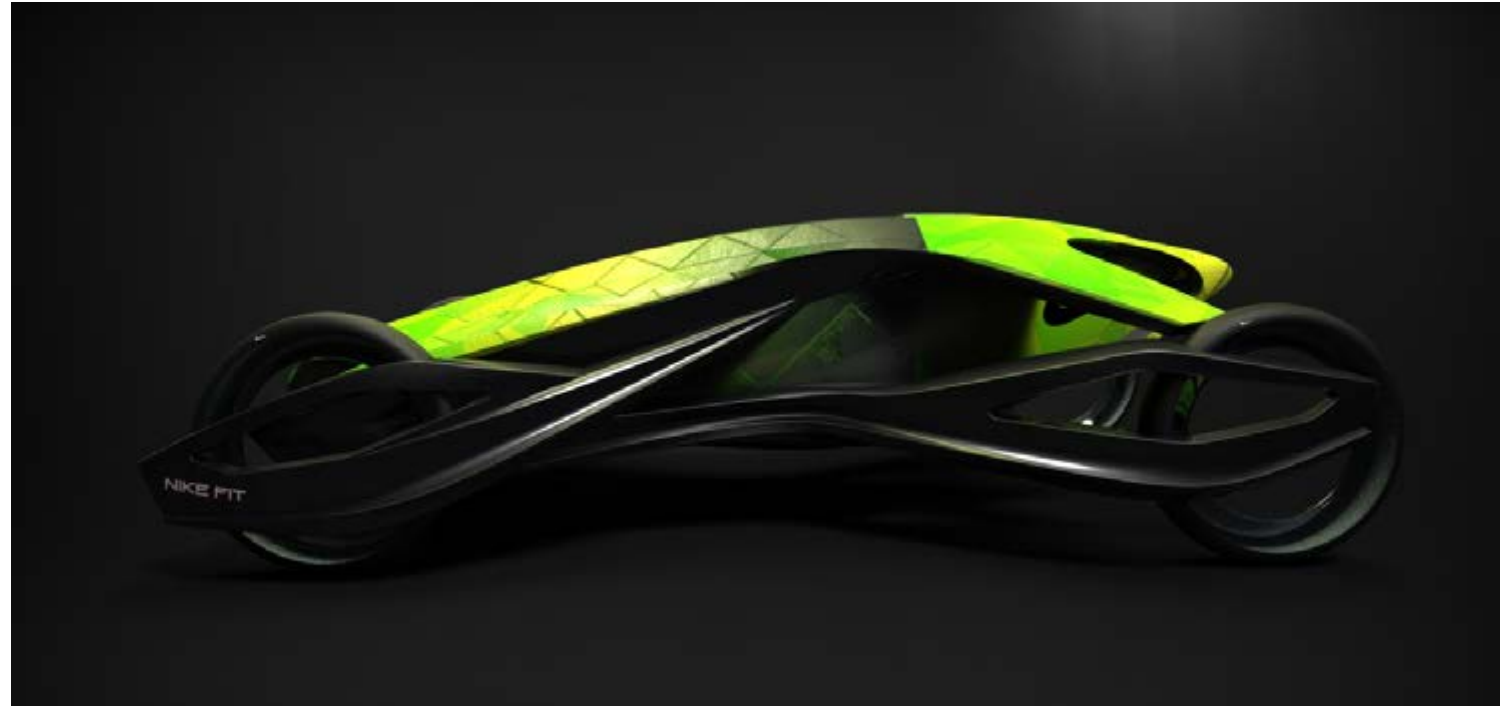
**Credits:** 240 ECTS

**Duration:** 4 years

**Schedule:** Monday to Friday, full time

**Calendar:** September - June

**Area directors:** Raffaella Perrone and Oriol Guimerà

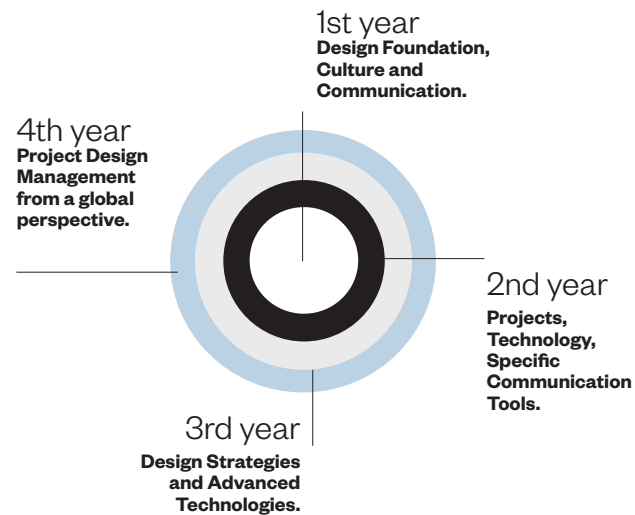


FIT, Alessandro Manunza and Josep Pujol for Bertone

## COURSE DESCRIPTION

**“IED Design trains designers to be capable of anticipating and catering for the needs of society and individuals in their interaction with objects and spaces.”**

Both interior designers and product or transport designers have the goal of providing innovative and efficient solutions with a commitment to sustainable development. Studying at IED Design gives students the chance to work with design companies and institutions in the sector, as well as innovation centres. All of the teachers are working professionals, and the school's workshops are brand new and equipped with the best tools and materials for developing projects.



# TRANSPORT DESIGN

The course trains students to become transport designers who are capable of generating ideas to solve mobility problems from a global perspective. Transport designers who graduate from IED Design are versatile and have the advantage of having received multidisciplinary training. The teaching methodology is based on the skills needed to create strategies and future design languages. This ensures the student's motivation, keeps priorities in line with technical requirements, branding and costs, and provides the enthusiasm needed to give design a distinctive trait so as to guarantee the client is offered a successful product.



Mergo, Cristoph Sokol for SEAT

## WHO IS IT AIMED FOR?

The Undergraduate Degree in Transport-Product Design provides future professionals with the knowledge and skills they need to create designs bearing in mind the user and their surroundings, ergonomics, social value, technology and materials. The course is geared towards people with a passion for the automobile and mobility industry in its broadest sense, ranging from interior and exterior design for means of transport (cars, motorbikes, trains, ships, aeroplanes, etc.) and all kinds of complements, accessories and related services

Pasprang,  
Alessandra Colella  
and Sanna Völker  
for Bertone



## EMPLOYMENT OPPORTUNITIES

As an interior and exterior designer for cars, motorbikes, ships, aircraft, public transport, bicycles and mobility accessories. Other options include working as a designer at the design, development, marketing, colour&trim or R&D departments of a company. Alternatively, graduates may become project managers, designers, materials researchers, trendsetters and 3D modellers in the transport and videogame sectors.

# FIRST YEAR

## TRANSPORT DESIGN

### BASIC TRAINING: 60 ECTS

#### First Semester Credits

DESIGN FOUNDATION I	6
REPRESENTATION TECHNIQUES I	6
PROJECT COMMUNICATION I	4
INTRODUCTION TO MARKETING	4
SCIENCE APPLIED TO DESIGN	4
COLOUR AND FORM	3

#### Second Semester Credits

DESIGN FOUNDATION II	6
REPRESENTATION TECHNIQUES II	4
PROJECT COMMUNICATION II	6
TECHNICAL DRAWING I	4
SOCIOLOGY	4
VOLUME I	3

#### Annual Credits

HISTORY OF ARTS AND OF DESIGN	6
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**1 ECTS** = 25 total hours of work.

Total hours of work = lecture hours (in the classroom) + work at home.

The management of the Istituto Europeo di Design reserves the right to alter the syllabus depending on the needs arising in terms of educational objectives.

Healthmet, a project by Albert Ferrer.

**DESIGN FOUNDATION I**

Introduction to the basics of design: structure, form, colour, space and volume. Analysis of form, composition and perception. Design critique from an inter-disciplinary point of view. Theory, methodology, ideation and conception of a project.

**REPRESENTATION TECHNIQUES I**

Using drawing as a form of observation, expression and representation. Analysing form and space. Appreciating and representing light. Memorisation and motion.

**PROJECT COMMUNICATION I**

Introducing the student to the construction, composition and transmission of ideas, thoughts and information, composition and visual perception.

**INTRODUCTION TO MARKETING**

Becoming familiar with the various fields of work involved in marketing, as well as the main essential tools applied in each of those fields. Applying principles and tools to case analysis. Offering an overall vision of marketing analysis and planning.

**SCIENCE APPLIED TO DESIGN**

Understanding and applying the scientific method. Analysis and simulation methods. Research and experimentation in science applied to design. Mathematics, physics and chemistry applied to design. Methodologies for appraising the environmental impact of processes and materials. Sustainable development.

**COLOUR AND FORM**

Introduce the student in the perception, structure and psychology of color

**DESIGN FOUNDATION II**

Introducing the student to anthropometry, ergonomics and bionics. Theory and methodology, ideation and conception of the project. Research and experimentation methods typically applied in the design process.

**REPRESENTATION TECHNIQUES II**

Knowing how to use instrumental techniques involving structure, expression and two- and three-dimensional representation. Construction, composition and transmission of ideas, thoughts and information. Drawing in the design project.

**PROJECT COMMUNICATION II**

Graphic representation using digital technology. Managing information. Digital devices and strategies. Trends for controlling and communicating information.

**TECHNICAL DRAWING I**

Introducing the student to plane and descriptive geometry. Research and experimentation methods typically applied in this field. Technical graphic language and its communicative significance in the field of design.

**SOCIOLOGY**

Becoming familiar with the main sociological theories linked to design. Becoming familiar with useful micro-theories applicable to everyday life. Enabling the student to grasp and create qualitative and quantitative sociological tools. Learning about the different types of society to understand their general mechanisms and development. Becoming familiar with tools to discuss, create and present ideas.

**VOLUME I**

Researching volume and spatial conception. Research and experimentation methods typically applied in this field.

**HISTORY OF ARTS AND OF DESIGN**

Providing the student with the right tools to discover the artistic elements of the past that live on today. Linking concepts from the history of art to the professional field of design. Reflecting on the interaction between artistic production and its context. Learning to recognise institutional and alternative spaces in artistic practice. Knowledge, analysis and meaning of art. History of arts, architecture, design and fashion. Society and art.



# SECOND YEAR

## TRANSPORT DESIGN

60 ECTS

### First Semester Credits

<b>MULTIDISCIPLINARY WORKSHOP I</b>	2
<b>COMPUTER TOOLS FOR PRODUCTS I</b>	6
DOMESTIC DESIGN MODULE	
<b>HISTORY OF PRODUCT DESIGN</b>	4
<b>DOMESTIC PROJECT</b>	4
<b>VOLUME FOR PRODUCT DESIGN</b>	3
STYLING MODULE	
<b>SEMIOTICS</b>	4
<b>STYLING PROJECT</b>	6
<b>REPRESENTATION TECHNIQUES FOR PRODUCT DESIGN I</b>	4

### Second Semester Credits

<b>INTERDISCIPLINARY PROJECT</b>	4
<b>TECHNOLOGY FOR PRODUCT DESIGN I</b>	6
ERGONOMICS MODULE	
<b>ERGONOMICS PROJECT</b>	3
<b>TECHNICAL PROJECT</b>	4
DELIVERY MODULE	
<b>PACKAGE PROJECT</b>	6
<b>TECHNICAL DRAWING FOR PRODUCT DESIGN I</b>	4

Volta EV-1, Guillem Galiano, Oliver Pecharramán and Eduardo Lorca for Volta Motorbikes.



## **MULTIDISCIPLINARY WORKSHOP I**

A hands-on workshop covering a topic that will boost the student's creativity and motivation.

## **COMPUTER TOOLS FOR PRODUCTS I**

Introducing students to graphic design software, mainly for drawing technical plans and 3D planimetry.

## **HISTORY OF PRODUCT DESIGN**

Introducing the student to the history of design as a tool for studying, interpreting and detecting trends in design.

## **DOMESTIC PROJECT**

Understand and integrate the aesthetic, urban and emotional dimension in the design of elements and mobility systems, thinking about the city of the future.

## **VOLUME FOR PRODUCT DESIGN**

Carrying out a variety of tasks in order to understand the possibilities that each material offers. Going from 2D to 3D using materials such as cardboard and PVC. Modelling with the right materials. Constructing volumes using the method of removing elements (by cutting, emptying, filing, piercing) with the right materials. Carrying out a final assignment to formalise an idea conceived by the student that has been worked on in the Project subject.

## **SEMIOTICS**

Understanding that all human activity is based on language. Grasping the concept of language, codes and fundamental systems of semiotics in order to achieve a critical point of view bearing in mind the world of design, art, society and culture as a system of codes. Performing a semiotic analysis of different examples of design, from the dawn of modern times to the present day in order to gain greater awareness of communication structures and systems.

## **STYLING PROJECT**

Understanding innovation in product formalisation. A complete analysis of each of the item's outer elements.

## **REPRESENTATION TECHNIQUES FOR PRODUCT DESIGN I**

Using sketches and inspiration boards in order to communicate the first ideas of a project clearly and stylishly. Introduction to freehand drawing. Developing sketching skills and better defining the proportions of elementary objects. Furthering sketching skills and defining conical perspective, vanishing point and side view. Rendering using a marker pen. Introduction to image editing software as a means of altering and perfecting drawings.

## **INTERDISCIPLINARY PROJECT**

Introduce a global and interdisciplinary vision of the design project in which you work a topic from different perspectives. Exercise creativity, motivation and group work.

## **TECHNOLOGY FOR PRODUCT DESIGN I**

Offering the student a global perspective of the materials used in product design. Obtaining skills for analysing and using constructive details, in the knowledge that they are part of the language for communicating in this field.

## **ERGONOMICS PROJECT**

Understanding the relationship between ergonomics and design. Temporal-spatial design. Human-machine system. Anthropometry. Muscle-skeleton system. Ergonomics of posture. The cardiovascular, respiratory and metabolic system. Ergonomics of physical strain.

## **TECHNICAL PROJECT**

Develop a project focusing on the technical definition of the product. Study of development and production of the object in each of its aspects.

## **PACKAGE PROJECT**

Learning to use the types of packaging on the market and recognize the most commonly used materials. Becoming familiar with the tasks involved in applying graphics to packaging. Understanding the movement of goods as a system. Studying the brand. Innovation in the sector (new materials, new typologies, new utilities and sustainability).

## **TECHNICAL DRAWING FOR PRODUCT DESIGN I**

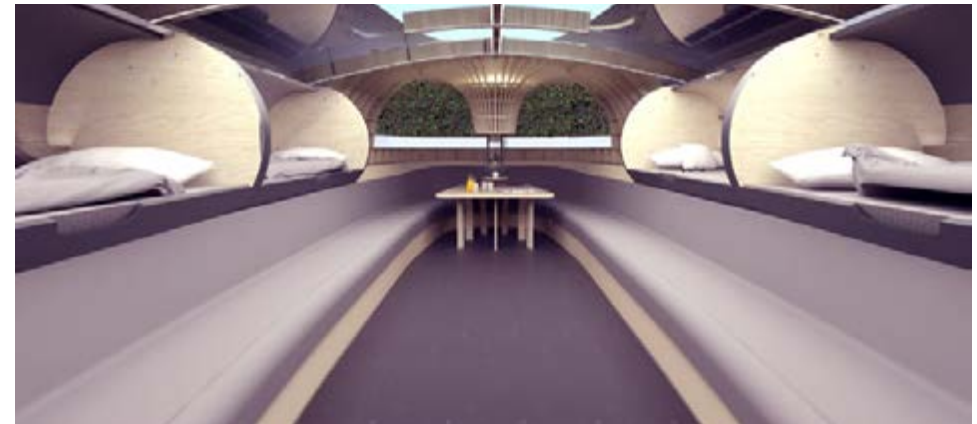
Broadening the student's knowledge of plane and descriptive geometry. Research and experimentation methods typically applied in this field. Technical graphic language and its communicative significance in the field of design.

# THIRD YEAR

## TRANSPORT DESIGN

60 ECTS

First Semester	Credits
<b>TECHNOLOGY FOR PRODUCT DESIGN II</b>	<b>6</b>
EXTERIOR PROJECT MODULE	
<b>TRENDS</b>	<b>4</b>
<b>EXTERIOR PROJECT</b>	<b>4</b>
<b>PROJECT COMMUNICATION FOR PRODUCT DESIGN I</b>	<b>4</b>
NAUTICAL MODULE	
<b>NAUTICAL PROJECT</b>	<b>4</b>
<b>COMPUTER TOOLS FOR TRANSPORT</b>	<b>8</b>
Second Semester	Credits
<b>LAB FOR PRODUCT DESIGN I</b>	<b>12</b>
<b>MULTIDISCIPLINARY WORKSHOPS II</b>	<b>2</b>
PERSONAL DEVELOPEMENT PROJECT MODULE	
<b>PERSONAL DEVELOPMENT PROJECT</b>	<b>4</b>
<b>MARKETING</b>	<b>4</b>
MOBILITY MODULE	
<b>TWO WHEELS PROJECT</b>	<b>4</b>
<b>PROJECT COMMUNICATION FOR PRODUCT DESIGN I</b>	<b>4</b>



New Horizon Scout, Petr Tanko, Filipa Marques and Christoph Sokol.

## **TECHNOLOGY FOR PRODUCT DESIGN II**

Provide the necessary tools to the students so that they can decide which are the most suitable materials and industrial processes. To achieve the skills to analyze and develop technical details, understanding that they are a part of the communication language of the profession.

Carry out exercises to put into practice the technical knowledge within the public and private vehicle's industry.

## **TRENDS**

Providing the student with the right tools for identifying the elements that are currently popular in the world of products and design. Providing the student with a critical approach towards new trends.

## **EXTERIOR PROJECT**

Learning about the process of designing a vehicle, from the briefing stage to the creation of a scale model. Applying prior knowledge of other subjects (sketching, Alias, vehicle architecture) to the project process. Developing basic concepts by applying creativity and analysis methods, and managing to project them in a real package. Associating the creation of a clay model in different scales with the creative project process and seeing it as a presentation tool. Implementing a project plan according to the goals and timings set.

## **PROJECT COMMUNICATION FOR PRODUCT DESIGN I**

Using sketches and inspiration boards in order to communicate the first ideas of a project clearly and stylishly. Introduction to freehand drawing. Developing sketching skills and better defining the proportions and views of elementary objects. Furthering sketching skills and defining conical perspective, vanishing point and side view. Rendering using a marker pen. Introduction to image editing software as a means of altering and perfecting drawings.

## **NAUTICAL PROJECT**

Introducing the student to the world of ocean transport. Types of vessels, categories, basic vessel structure, names of the main types of vessels and their parts. Presenting four briefs chosen for each student in order to carry out a style and concept design project individually.

## **COMPUTER TOOLS FOR TRANSPORT**

Advanced modelling. Analysing and creating a virtual car design model with high mathematical, dimensional and representative quality, which is essential in order to obtain 3D planimetry.

## **LAB FOR PRODUCT DESIGN I**

Introducing students to the use of graphic software and representation tools, mainly for drawing up technical plans and creating 3D planimetry and drafts. Providing students with advanced knowledge on rendering, representing and producing 3D animations of spaces and objects, both analogically and digitally.

## **MULTIDISCIPLINARY WORKSHOPS II**

A hands-on workshop covering a topic that will boost the student's creativity and motivation.

## **PERSONAL DEVELOPMENT PROJECT**

Give the opportunity to the student to freely investigate an area of design of his interest and choice. The initial research process provides a starting point, for a later development of the personal brief, of an open nature and of a specific product.

## **MARKETING**

Becoming familiar with the various fields of work involved in marketing, as well as the main essential tools applied in each of those fields. Applying principles and tools to case analysis. Offering a practical take on marketing analysis and planning.

## **TWO WHEELS PROJECT**

Understanding the development and difficulties of a project dedicated exclusively to vehicles on two wheels.

# FOURTH YEAR

## TRANSPORT DESIGN

60 ECTS

First Semester	Credits
PROFESSIONAL INTERNSHIP	6
TRANSPORT INTERIOR PROJECT	4
MOBILITY PROJECT	4
PROJECT DESIGN MANAGEMENT	4
PROJECT COMMUNICATION FOR PRODUCT DESIGN II	4
LAB FOR PRODUCT DESIGN II	4
MULTIDISCIPLINARY WORKSHOP III	2

Second Semester	Credits
FINAL PROJECT	30



Kiro, Luis Mestre for SEAT

**PROFESSIONAL INTERNSHIP**

Gaining professional experience to apply the knowledge and skills acquired during the three previous years.

**TRANSPORT INTERIOR PROJECT**

Researching the need to define new actions on vehicle interiors. Studying new materials, systems and lighting. Using interfaces: communicating the object to the user.

**MOBILITY PROJECT**

Awaken the creativity to investigate, think and develop new transportation systems. Introduction to the service design.

**PROJECT DESIGN MANAGEMENT**

Introducing the student to the stages of research, product definition and conceptualization prior to the final development of the design project. Being able to define one or several products or spaces from the identification of a market opportunity, based on their understanding of the brand and their observation of the users' needs. Will be taken into account the critical capacity to analyze the information that is generated during the project, as well as the communication skills. An assessment will also be made of the issues of sustainability and social impact in the project proposal.

**PROJECT COMMUNICATION FOR PRODUCT DESIGN II**

Explaining the importance of presenting the projects properly and preparing a personal portfolio. The student is required to prove the skills they have acquired by making a presentation before a board made up of teachers and sector professionals.

**LAB FOR PRODUCT DESIGN II**

Introducing students to the use of graphic software and representation tools, mainly for drawing up technical plans and creating 3D planimetry and drafts. Providing students with advanced knowledge on rendering, representing and producing 3D animations of spaces and objects, both analogically and digitally.

**MULTIDISCIPLINARY WORKSHOP III**

Carrying out a hands-on workshop to cover topics that will help boost the student's creativity and motivation.

**FINAL PROJECT**

Defining a product that could be brought to market considering its financial coherence, functionality and aesthetics. Learning to apply the technical knowledge acquired and the right materials, bearing in mind an environmental sustainability study. Controlling all phases of the design process, from initial research to the project's formalisation and communication. Underlining the importance of defining the user and brand identity the project is aimed for. The project will be carried out in collaboration with a company, which means students will need to follow a given brief and propose innovative ideas to the company.

# ADMISSION AND REQUIREMENTS

COURSE	REQUIREMENTS	ADMISSION PROCESS
<p><b>UNDERGRADUATE DEGREE</b> (4 years, 240 ECTS)</p>	<p><b>HAVING COMPLETED SECONDARY SCHOOL</b> (any A-levels or advanced vocational training)</p>	<p><b>ADMISSION TEST</b> And an interview with the orientation and admissions department.</p>



**ALUMNI** (STUDENTS WORK OR HAVE WORKED WITH): **Barcelona Design Week, BM Light Lighting Design, BMW, Capmar, Cazaly Sylvain, Ferrari, FICO Cables, Gama Ubica, Home Design, Hyundai, Ibisland Invest, Lamborghini, Llum Bcn, McLaren, Mercedes-Benz, MID i Disseny per viure al Museu del Disseny de Barcelona, MTL Brands, Orbitel, Projeckta, SA Mobilities, Scutum Logistics, Seat, Telefónica I+D, Tous, Volvo, VMoto Europa, Zicla, etc.**

**NOTES:**





