



**1. Code:** 32501      **Name:** Modelling of Systems-for Knowledge Management in Industrial Design

**2. Credits:** 5,00      **--Lecture:** 2,50      **--Practice:** 2,50      **Type of Course:** Elective

**Degree:** 2160-Master's Degree in Design Engineering

**Module:** 1-Elective subjects Semester A      **Subject:** 1-Research and development in design

**University Center:** SCHOOL OF DESIGN ENGINEERING

**3. Coordinator:** Hernandis Ortuño, Bernabé  
**Departament:** GRAPHICS ENGINEERING

#### 4. References

Diseño de nuevos productos : una perspectiva sistémica

Modelo sistémico para la gestión de empresas

[www.id-think.com](http://www.id-think.com)

Hernandis Ortuño, Bernabé | Iribarren Navarro, Emilio | Universidad Politècnica de Valencia  
Hernandis Ortuño, Bernabé | Agustín Fonfría, Miguel Ángel | Esnal Angulo, Iñaki  
Bernabé Hernandis, Iñaki Esnal, Miguel Angel Agustín.

#### 5. Course Outline

To introduce systems theory as a way of representing business systems, as well as the knowledge management necessary for their control. It is therefore a question of modelling its functioning and being able to represent its structure in order to analyse its strategic, tactical and operational management, with the aim of acquiring the necessary knowledge for the execution of models, diagnosis of problems and design of proposed models, for the piloting of these systems, realisation of ID-Think models, for the management of design in companies, both of products and services and their application to any type of activity. ID-Think Models, for the management of knowledge oriented to the innovation of industrial products (Design Thinking). Emphasis will be placed on how to set up an entrepreneurial company and the necessary requirements for setting it up. Models for the design of the corporate image. Models for the design of the web of products or services. the start-up of an entrepreneurial company at an individual or collective level will be especially valued, thus generating the starting model of a future business. For this purpose, posters or expository presentations and/or the writing of magazine articles that serve as a communicational projection of a company will be carried out. The student will be oriented in the business participation studying the main roles of the designer and his incorporation in the proposed business models. The aim is to introduce the student into the business world from the design of a product and/or service and the praxis involved in setting up a company, including administrative procedures and requirements.

#### 6. Recommended Prior Knowledge

Knowledge of systems in general. Knowledge of knowledge management.

#### 7. Student Outcomes

##### Specific Student Outcomes

002(GE) Students know how to apply their acquired knowledge and problem-solving skills in new or unfamiliar settings within broader (or multidisciplinary) contexts related to their area of study.

07(ES) Apply process management techniques to speed up time in the conception, production and launch of products.

06(ES) Apply the systemic approach to business modelling.

##### UPV-Generic Student Outcomes

(04) Innovation, creativity and entrepreneurship

- Activities carried out to achieve the student outcome

Activities carried out in connection with the acquisition of competitors:

Application of Creativity Techniques, Conceptualization

Generation of a model for entrepreneurship. Implementation of ID-Think models of products/services, presentation and communication of results.

- Detailed description of the activities

Detailed description of the activities : The student must apply different creativity techniques, evaluate results and develop communication, graphic and visual techniques. Poster presentation and articles.

- Assessment criteria

Evaluation criteria: Quantitative and qualitative evaluation of the results achieved. Poster evaluation and quality of oral and graphic communication.

(08) Effective communication

- Activities carried out to achieve the student outcome

Presentation of papers, posters and articles.



## 7. Student Outcomes

### UPV-Generic Student Outcomes

- Detailed description of the activities  
Present group work. Make a poster and prepare exhibitions. Learn how to write articles oriented to publications in industrial design. News writing for communication in design.
- Assessment criteria  
Valuation of works and co-evaluation.

## 8. Syllabus

1. Topic 1 Introduction to systems  
1.1- The concept of. system  
1.2- Formulation Model by Objectives  
1.2.1-External System Analysis  
1.2.2-Study of Subsystems  
1.2.3-Target Setting  
1.2.4-Types of Variables

1.

2. Topic 2 Study of models  
2.1- System models. 2.2.1-Models of systems for knowledge management  
2.2.2-Models for design management (product/service)  
2.3- Strategic, tactical and operational management  
2.4-Systems Control

3. Topic 3 Simulation of the model  
3.1- Current model  
3.2- Diagnosis  
3.3- Proposed model  
3.4- Pilot Study

4. Topic 4 Applications  
4.1- Business models  
4.2- Product models

## 9. Teaching and Learning Methodologies

<u>UN</u>	<u>LE</u>	<u>SE</u>	<u>PS</u>	<u>LS</u>	<u>FW</u>	<u>CP</u>	<u>AA</u>	<u>CH</u>	<u>NCH</u>	<u>TOTAL HOURS</u>
1	5,00	--	--	5,00	--	--	1,00	11,00	5,00	16,00
2	5,00	--	--	5,00	--	--	1,00	11,00	25,00	36,00
3	5,00	--	--	5,00	--	--	1,00	11,00	25,00	36,00
4	10,00	--	--	10,00	--	--	1,00	21,00	30,00	51,00
<b>TOTAL HOURS</b>	<b>25,00</b>	--	--	<b>25,00</b>	--	--	<b>4,00</b>	<b>54,00</b>	<b>85,00</b>	<b>139,00</b>

UN: Unit. LE: Lecture. SE: Seminar. PS: Practical session. LS: Lab sessions. FW: Field work. CP: Computer-mediated practice. AA: Assessment activities. CH: Contact hours. NCH: Non contact hours.

## 10. Assessment

### Outline

	<u>Num. Acts</u>	<u>Weight (%)</u>
(04) Conceptual chart	1	20
(05) Academic studies	1	30
(12) Co-evaluation	1	10
(10) Case	1	10
(09) Project	2	30

The monitoring of tasks as well as compliance with established planning and adaptive capacity will be assessed according to the fulfilment of tasks and objectives. Creativity and innovation are also valued in the development of proposals. Several presentations will be made in order to monitor the degree of compliance with the objectives set. In the event that the student has not passed the corresponding evaluation exercises, tests similar to those carried out will be available in order to make it possible to acquire the knowledge that has not been passed. It will also be possible for the student to make articles presenting the company, products and/or services that are offered in order to learn everything necessary for the implementation of an idea from the business point of view, forming part of the work to be evaluated.

## 11. Absence threshold

<u>Activity</u>	<u>Percentage</u>	<u>Observations</u>
Lecture Theory	20	Exposition of contents by means of presentation or explanation on the part of a teacher (including demonstrations).
Lecture Practice	20	Preparation of activities to develop, expose and deliver in the practical classes.
Field Practice	20	The student must explore and work on a practical problem applying interdisciplinary knowledge referenced in class.