

## INNOVATIVE DESIGN PROJECTS 2020-2022

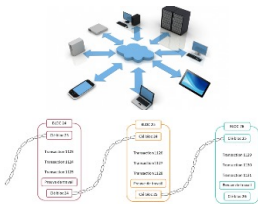
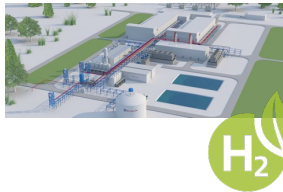


### Dom Perignon (2022)

Designing a POC to explore value creation from the CO2 emitted during champagne's fermentation

### Air Liquide (2022)

Designing and managing green hydrogen infrastructures and services in an industrial area for ecological transition



### Ubisoft (2022)

Design strategy for data sharing thanks to blockchain in information systems

### SNCF (2021)

Towards dynamic standards in the engineering department of SNCF Réseau to regenerate 'small railway lines'



### Agricoool (2021)

Design of a new agricultural system based on a creative heritage of a start-up

### MKS (2021)

Combining agility and anticipation in the semi-conductor industry : integration of "concept-product" in the functional requirements.



## CURRICULUM HEADS & CONTACTS

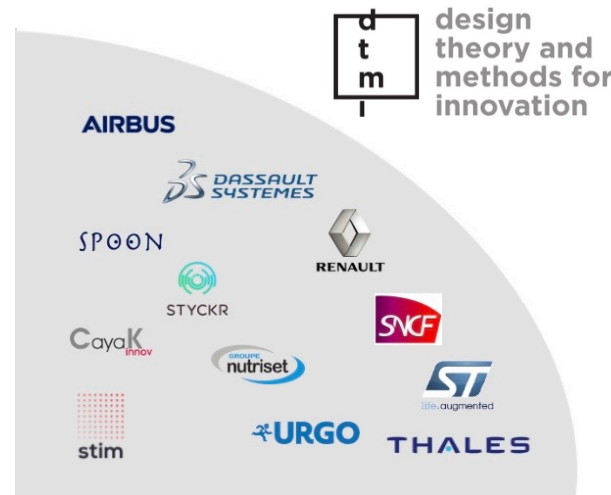
Sophie Hooge (sophie.hooge@minesparis.psl.eu)  
Pascal Le Masson (pascal.le\_masson@minesparis.psl.eu)  
Benoit Weil (benoit.weil@minesparis.psl.eu)

## TEACHING TEAM

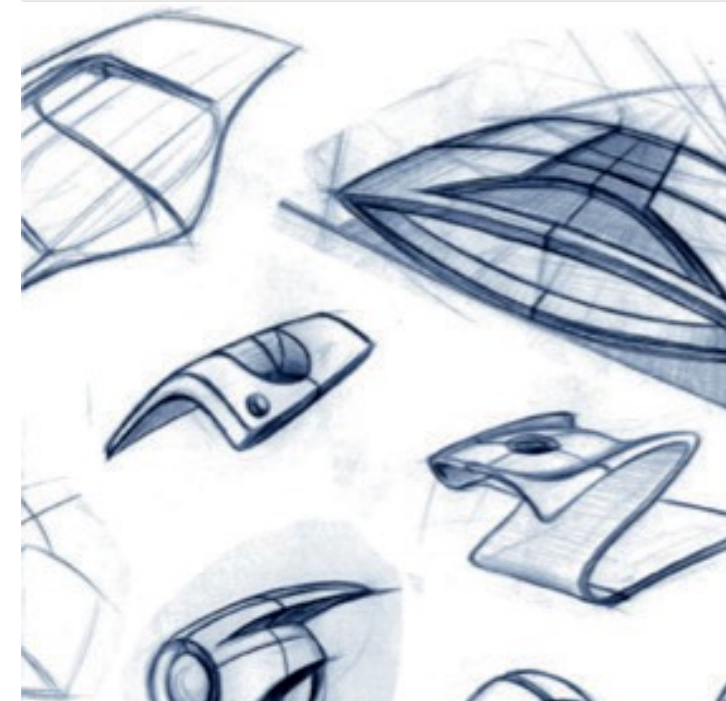
Franck Aggeri	Nafissa Jibet
Raphaëlle Barbier	Caroline Jobin
Antoine Bordas	Jérémy Lévêque
Justine Boudier	Kevin Levillain
Benjamin Cabanes	Michel Nakhla
Anaëlle Camarda	Quentin Plantec
Mathieu Cassotti	Samantha Ragot
Cédric Dalmasso	Blanche Segrestin
Alix Deval	Louise Taupin
Agathe Gilain	Maxime Thomas
Honorine Harlé	Chipten Valibhay
Armand Hatchuel	

## INDUSTRIAL PARTNERS

### CHAIR OF DESIGN THEORY AND METHODS FOR INNOVATION



60 boulevard Saint-Michel  
75272 Paris cedex 06  
<https://www.minesparis.psl.eu/>



## OPTION INGENIERIE DE LA CONCEPTION (IC) ENGINEERING DESIGN AND MANAGEMENT CURRICULUM

2022

IF YOU WANT TO  
KNOW MORE,  
PLEASE VISIT



# ENGINEERING DESIGN AND MANAGEMENT CURRICULUM



The curriculum in Engineering Design and Management at MINES Paris - PSL focuses on the management of design activities for new products, systems or services and the associated management of research and industrial projects. The objective is to teach the methods and skills allowing to organize collective activity of creation from ideation to industrial implementation.

Based on the most recent breakthroughs in design theory and generative processes, the curriculum has developed an education program on methods and processes for the management of innovative design and unknown in the context of transitions.

The program benefits from several industrial partnerships. With these partners, the students develop innovative design projects and methods in real life situations within companies, with the support of researchers experts in design.

Allying scientific rigor and industrial relevance, this curriculum prepares the students for careers in engineering design, in R&D, in innovation department, in product department – more broadly : to be an engineer who is more than an optimizer or a decision-maker: a design engineer and creative manager.



Project management  
Design theory  
Design strategy and economics  
Introduction to industrial design  
Management of the unknown  
History of engineering design

Learn and use most recent theories of design that integrate the diversity of design schools and prepare students to highly innovative contexts.

Provide knowledge on design in industry, both its history and its contemporary challenges

Stimulate students creativity and capacity to intervene in real industrial projects.

The program is based on two forms of pedagogy: a period of classroom teaching followed by an innovative design project, taking place in a company.



Design workshops consist in trainings to develop a design strategy for a range of innovative consumer products or services in a given innovation field (digitalization, climate change, inclusiveness,...) that allows the design of a range of innovative products and services to face contemporary challenges (sustainable design goals,...).

Recent subjects:

- "smart cities and tourism" in partnership with L'école 42,
- "new solidarities in energy insecurity contexts" with the Rexel foundation
- "Insurance for digital identity" with La Matmut.

This exercise is done in partnership with ENSAAMA (Ecole Nationale Supérieure des Arts Appliqués et Métiers d'Art), to enable engineers and industrial designers to meet and discover their methods.



Conducting contemporary transitions calls for new responsibility for the design engineers.

This responsibility requires to manage unknowns and a responsible creative collective action in order to avoid unsatisfactory dilemma and trade-offs between given choices. The curriculum aims at giving state-of-the-art methods for responsible design based on a critical and deep understanding of the current stakes and the creative reasonings and organizations that can help generating desirable futures.

Examples of new responsible design practices:

- Building resilience in organization to face or shape new unknowns
- Designing creative heritage to preserve traditions and skills without impeding creation.
- Creating new practices, methods and norms enhancing the capacity of actors to design together.



Students work on a project in a company, addressing a real-life design problem

- Subjects are carefully selected to enable students use of design theory and methods in action
- Students are mentored by the professors and researchers of the curriculum

Examples of projects:

- Study and evaluation of innovation processes and labs : Decathlon, Renault, Thales, SNCF, Valeo, FootOVision
- Exploration of innovation fields and elaboration design strategies : Thales, Valeo, Tarkett, Essilor, SEB, Airbus
- Knowledge for innovation : Urgotech, Radiall, SoftAtHome, IDEXLab, Audemars-Piguet, MMT-Sonceboz, Orange, Engie
- Design organization (Research, manufacturing, technical support, IT, Commerce, patenting services,...) : CEA, Airbus, ST Microelectronics, Carrefour, Safran