



UNIVERSITAT  
POLITÈCNICA  
DE VALÈNCIA



## Incorporating new immersive learning spaces in Formal Learning for Z Generation

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With the support of the  
Erasmus+ Programme  
of the European Union



ENHANCE

ENHANCE Learning environments for alpha generation

Departamento de Organización de Empresas

Prof. Julien Maheut

# Outline

1. Introduction & Research questions
2. Methodology
3. Step by step approach
4. The proposed model - Sandbox “SEAMIC”

# 1. Introduction & Research questions

“Z Generation expects new immersive learning spaces in formal learning.

This tech-savvy generation's unique characteristics and preferences imply the need to **design new bachelor's and diplomas** to align their competencies and skills with the existing and future immersive technologies.

Are we ready for that?”

## Smart Learning: The Didactics

**Future student**  
will ask for that  
learning that is not possible with a  
fingertip and needs human  
interaction

- ✓ Curated contents as a source of information
- ✓ Immersive learning scenarios
- ✓ Multidisciplinary
- ✓ Emerging Disruptive technologies



- Learn to Learn
- Using inquiry process
- Research-Based Learning
- Hands-on experiences
- Soft, Human, Ethic, Aesthetic Skills

## STEHEAM Perspective

Science\_Technology\_Engineering\_

(H) Humanistic  
(E) Ethics  
(A) Aesthetics

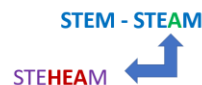
Mathematics

(Aesthetic and visual development)

Develop Scientific Argumentation through Aesthetic & Ethic Skills

## SMART Learning

- ✓ personal and full of choices
- ✓ Taking into account the unexpected learning
- ✓ Materials should be authentic and context-based
- ✓ learning by doing



## FUTURE OF EDUCATION

Motivation, Expectation,  
Attitude toward learning, Goals,  
Main Role, Use of Technology  
(+)

Igniting Transformation



iScholars, Hi-Tech, Savvy-Techs, Analogs

Transdisciplinary Spaces  
Immersive Experiences  
STEHEAM Perspective  
Innovative and Updated curriculum

## Research questions:

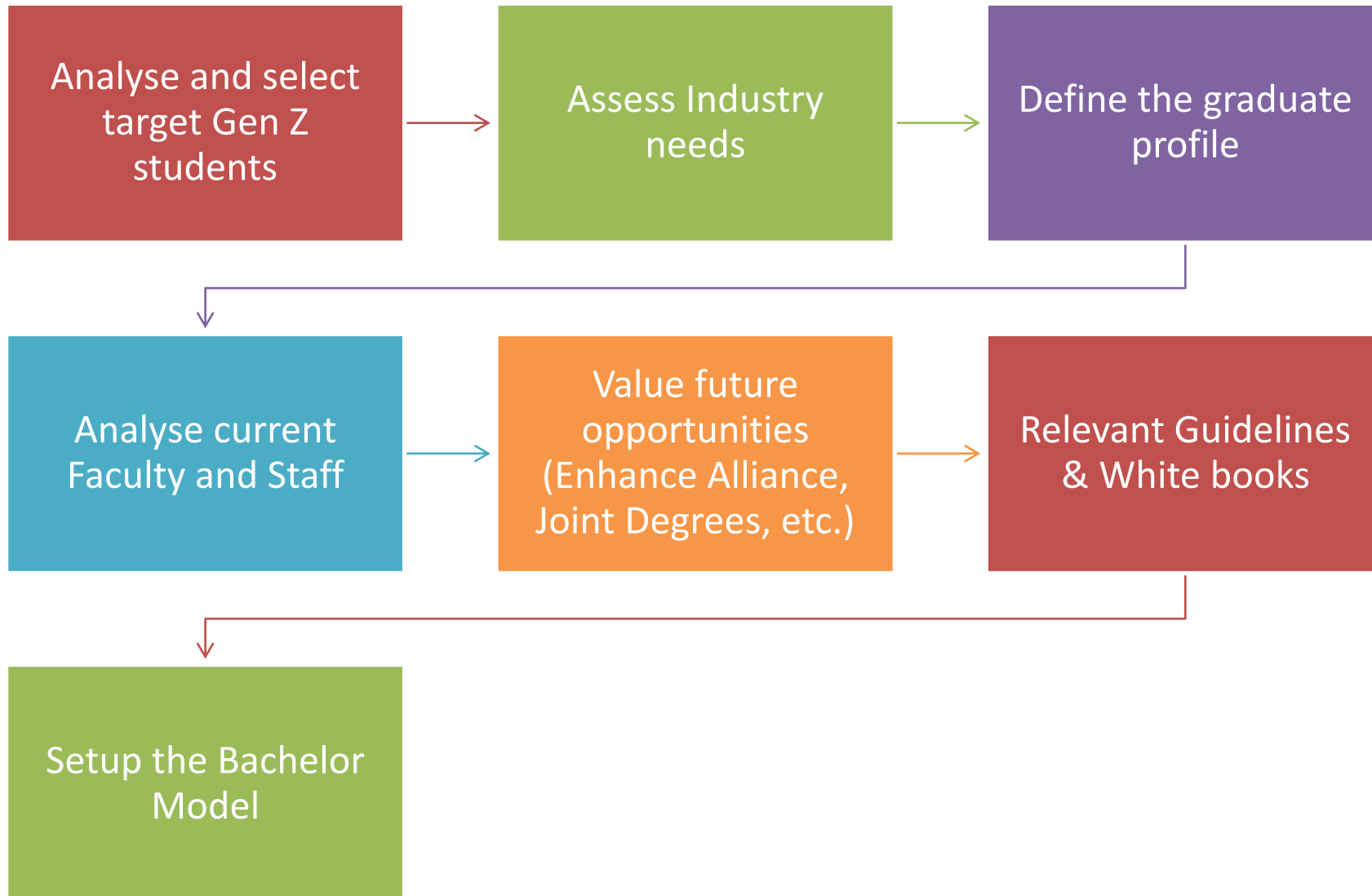
- How to **design the curriculum** of a new bachelor's degree program where immersive learning spaces are relevant?
- What are the **key competencies and skills** that should be developed through **immersive learning spaces** in the context of a specific bachelor's degree program?
- What strategies can ensure immersive learning spaces cater to **diverse learning styles** and accommodate students with different abilities in the new bachelor's degree program?

## 2. Methodology



Methodology

## 2. The used methodology





# 3. Step-by-step approach



# Empathy Mapping

## Developing an empathy map with an external consultant



Santiago Salas, 18 years old  
(Z Generation)

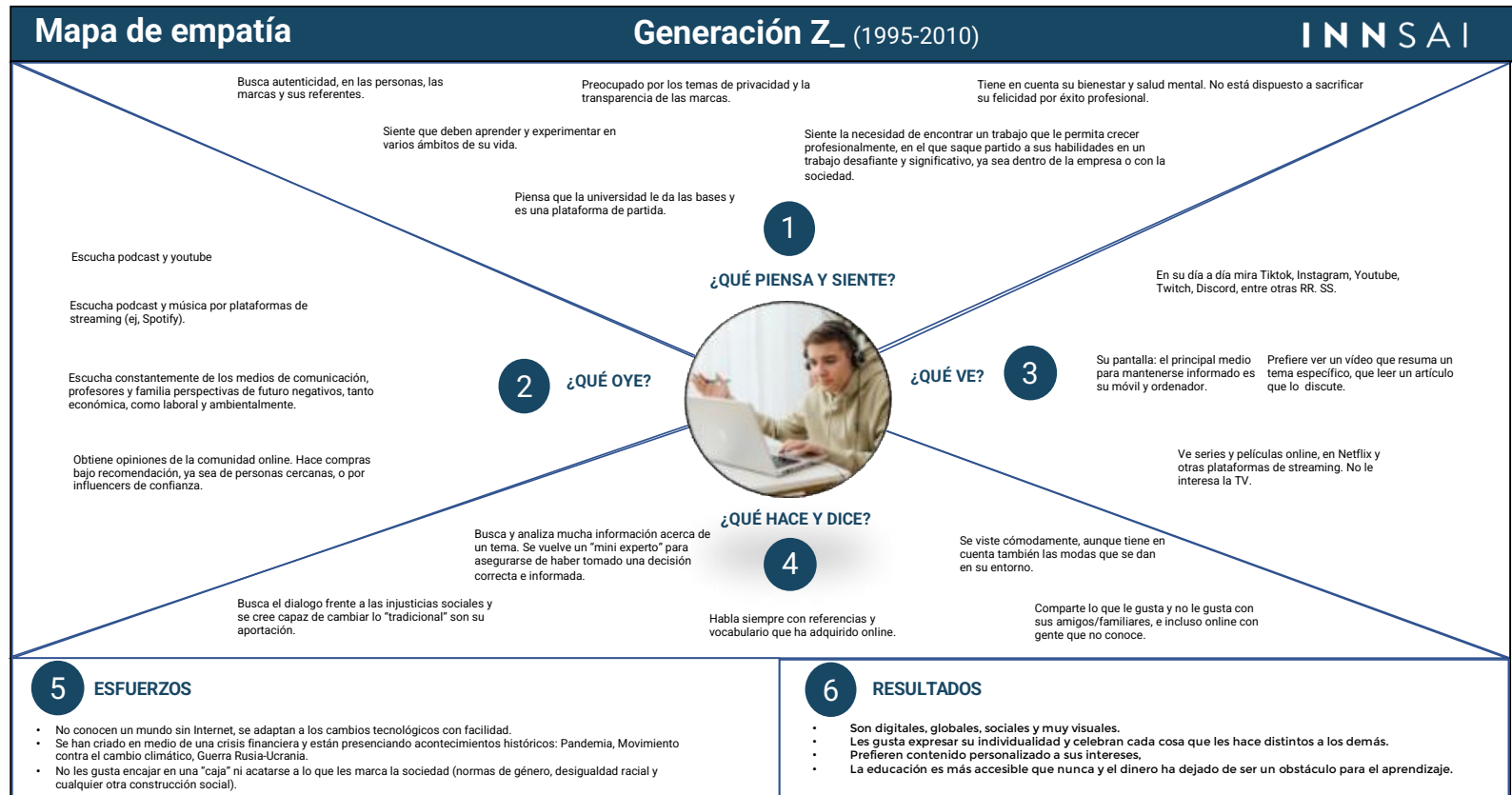
### Objective

Describe the profile of a current student who is at the point of entering the university.

### Scenario description

It helps us to understand from the student's perspective how he is, his preferences, what influences him and his level of coherence:

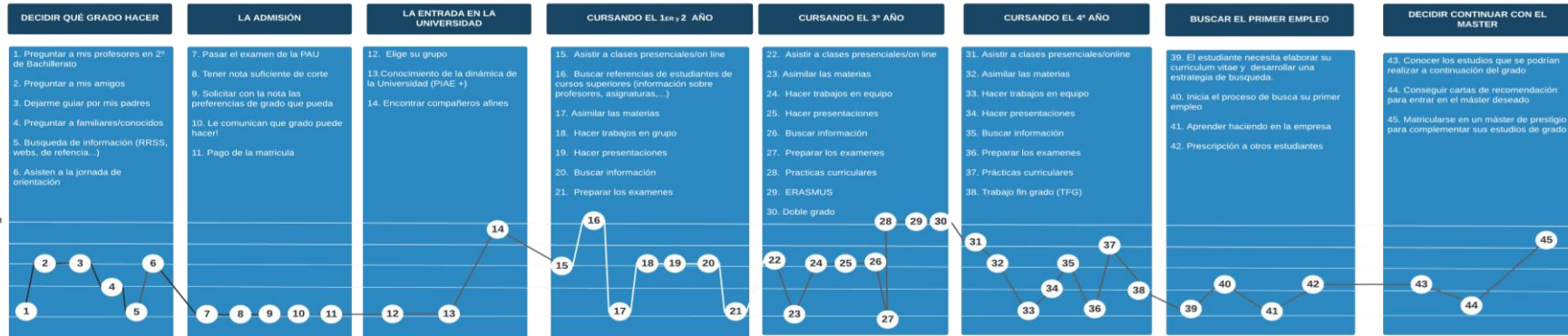
- What does he/she think and feel?
- What does he/she hear?
- What does he/she see?
- What does he/she say?



# Customer journey mapping

## Analysing the weakness, strength and opportunities through the customer journey map

### Etapas



### Acciones

### Diagnóstico

### Ideas



# Assess Industry needs

## Understanding sectorial innovation challenges and the necessary Technologies 4.0

### Consumers

Get to know the behaviour of future generations

#### CONTENTS

- Baby Boomers
- Generation X >
- Generation Y >
- Generation Z >
- Alpha Generation >

### Technologies

Discover which ones are revolutionising business models

#### CONTENTS

- Technologies 4.0 >
- Metaverse >

### Innovation trends

Get to know the trends in each sector

#### CONTENIDOS

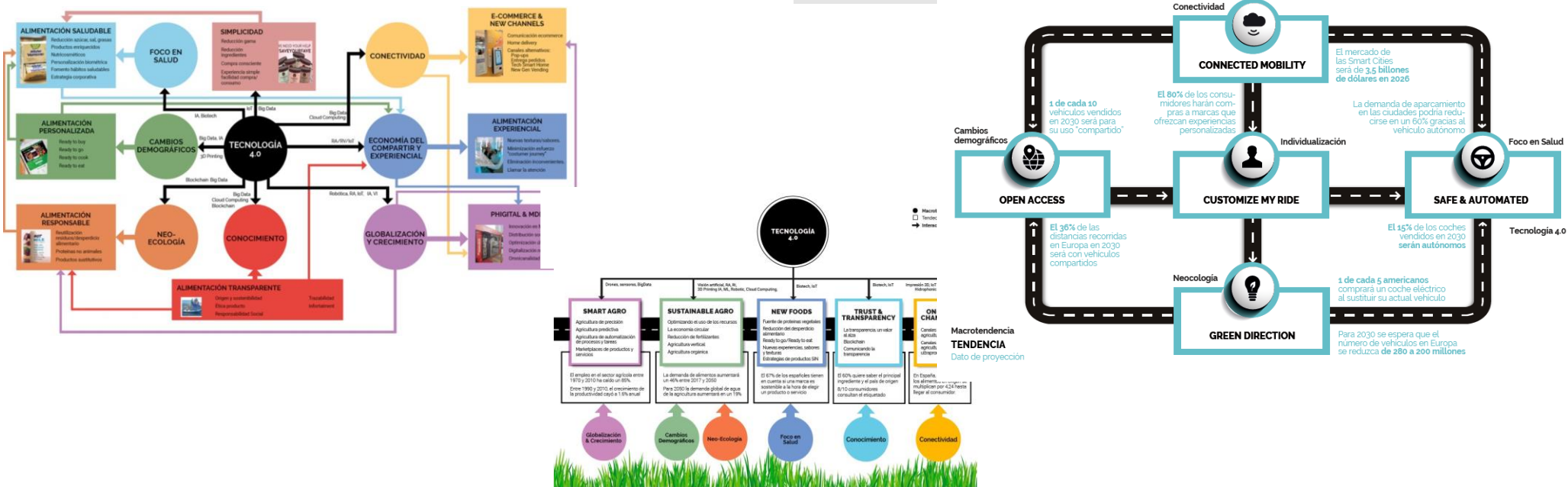
- Mobility >
- Tourism >
- Food >
- Agriculture >
- Health >

### Challenge Innovation

It depends on the innovation challenges at sectoral level

#### CONTENIDOS

- Mobility >
- Tourism >
- Food >
- Agriculture >
- Health >



Source: INNSAI Monitor. Observatorio de Transformación Modelos de Negocio del Futuro

# Current Faculty and Staff

- Leader of MOOCs on edX in Spanish



## Universitat Politècnica de València MOOCs

Browse free online courses in a variety of subjects. Universitat Politècnica de València courses found below can be audited free or students can choose to receive a verified certificate for a small fee. Select a course to learn more.

### Courses

<p><b>Basic Spanish 1: Getting Started</b> Universitat Politècnica de Valèn...</p> <p>Course</p>	<p><b>Excel: Fundamentos y herramientas</b> Universitat Politècnica de Valèn...</p> <p>Course</p>	<p><b>Marketing digital en redes sociales</b> Universitat Politècnica de Valèn...</p> <p>Course</p>	<p><b>Python: aprender a programar</b> Universitat Politècnica de Valèn...</p> <p>Course</p>
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- Best practices in the UPV

00:03:47

LA APLICACIÓN DE WEBQUEST PARA GAMIFICACIÓN E INTERACTIVIDAD EN DOCENCIA INVERSA

Francisca Ramon Fernández

La aplicación de webquest para gamificación e interactividad en docencia inversa

HD 16:9 InterPLAY

Francisca Ramon Fernández, ...  
(13/09/2022) - CC BY-NC-ND

00:06:2

Docencia de asignaturas de diseño y análisis de productos y espacios con técnicas de prototipo virtual interactivo

Maria Begona Saliz Mauit

(04/02/2021) - CC BY-NC-ND

00:07:23

MERCADOS ENERGÉTICOS  
Grado en Ingeniería de la Energía

Herramienta de evaluación continua basada en problemas personalizados de corrección automática

Manuel Alcázar Ortega  
Departamento de Ingeniería Eléctrica

Herramienta de evaluación continua basada en problemas personalizados de corrección automática

VIDEO

Manuel Alcázar Ortega  
(04/02/2022) - CC BY-NC-ND

00:03:40

Diseño y evaluación de laboratorios virtuales en la enseñanza-aprendizaje de la Física

Hermerio Marcos Giménez Valentín, ...

(15/11/2021) - CC BY-NC-ND

- Students' association and clubs (“Generación espontánea”)

**CP-UPV**

**Competitive Programming UPV**  
¡Desafíos de Programación en Discord y mucho más!

Grupo creado por estudiantes de la ETSINF de la Universitat Politècnica de València con el objetivo de favorecer la mejora de las habilidades de sus miembros en el ámbito de la programación competitiva.

Ver grupo →

**Makers UPV**

Makers UPV es una organización creada por y para los estudiantes de ingeniería, sin ánimo de lucro y basada en la cultura Maker y la filosofía DIY (Do It Yourself). Nuestro objetivo en la universidad es formar a ingenieros en el ámbito más práctico y desarrollar proyectos en todos los campos d...

Ver grupo →

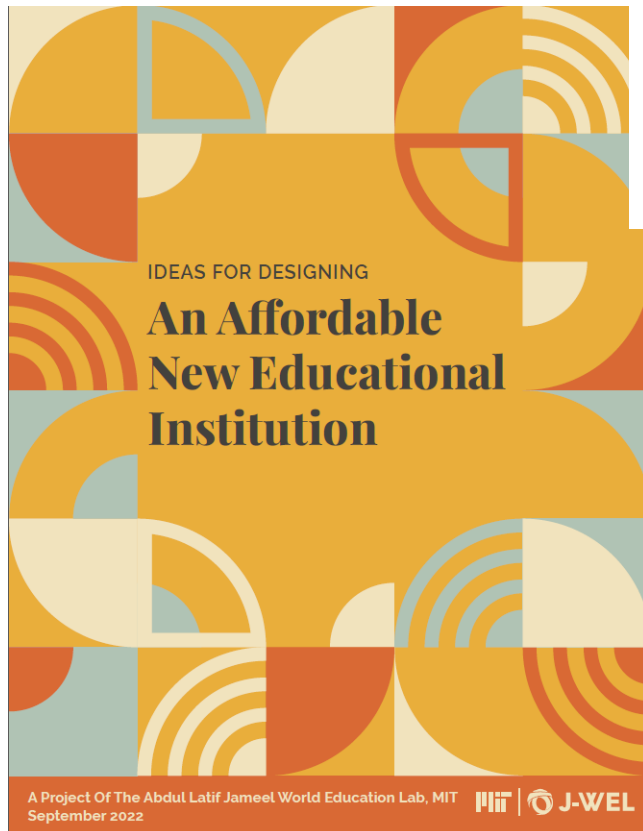
**Hyperloop**

Hyperloop UPV es un equipo multidisciplinar que busca desarrollar el transporte del futuro, a través de la competición internacional organizada por SpaceX y The Boring Company, propiedad de Elon Musk. Año tras año, el equipo diseña y construye un prototipo funcional que, tras superar a más de...

Ver grupo →

# Guidelines & White books

## European Alliance for Apprenticeships



Source: MIT. (2022). An Affordable New Educational Institution [White Paper]  
<https://openlearning.mit.edu/sites/default/files/2022-10/An-Affordable-New-Educational-Institution-NEI-MIT-JWEL-2022%20%28Final%209-27%29.pdf>

### European Approach for Quality Assurance of Joint Programmes

October 2014

approved by EHEA ministers in May 2015

Source: <https://www.eqar.eu/kb/joint-programmes/>



Brussels, 25 May 2022  
(OR. fr, en)

9237/22

LIMITE

EDUC 154  
RECH 252  
SOC 272  
DIGIT 101  
ENV 445

Interinstitutional File:  
2021/0402(NLE)

#### 'I/A' ITEM NOTE

From: General Secretariat of the Council  
To: Permanent Representatives Committee/Council  
Subject: Proposal for a Council Recommendation on a European approach to micro-credentials for lifelong learning and employability  
- Adoption

Source: <https://education.ec.europa.eu/education-levels/higher-education/micro-credentials>



<https://ec.europa.eu/social/main.jsp?catId=1147&langId=en>

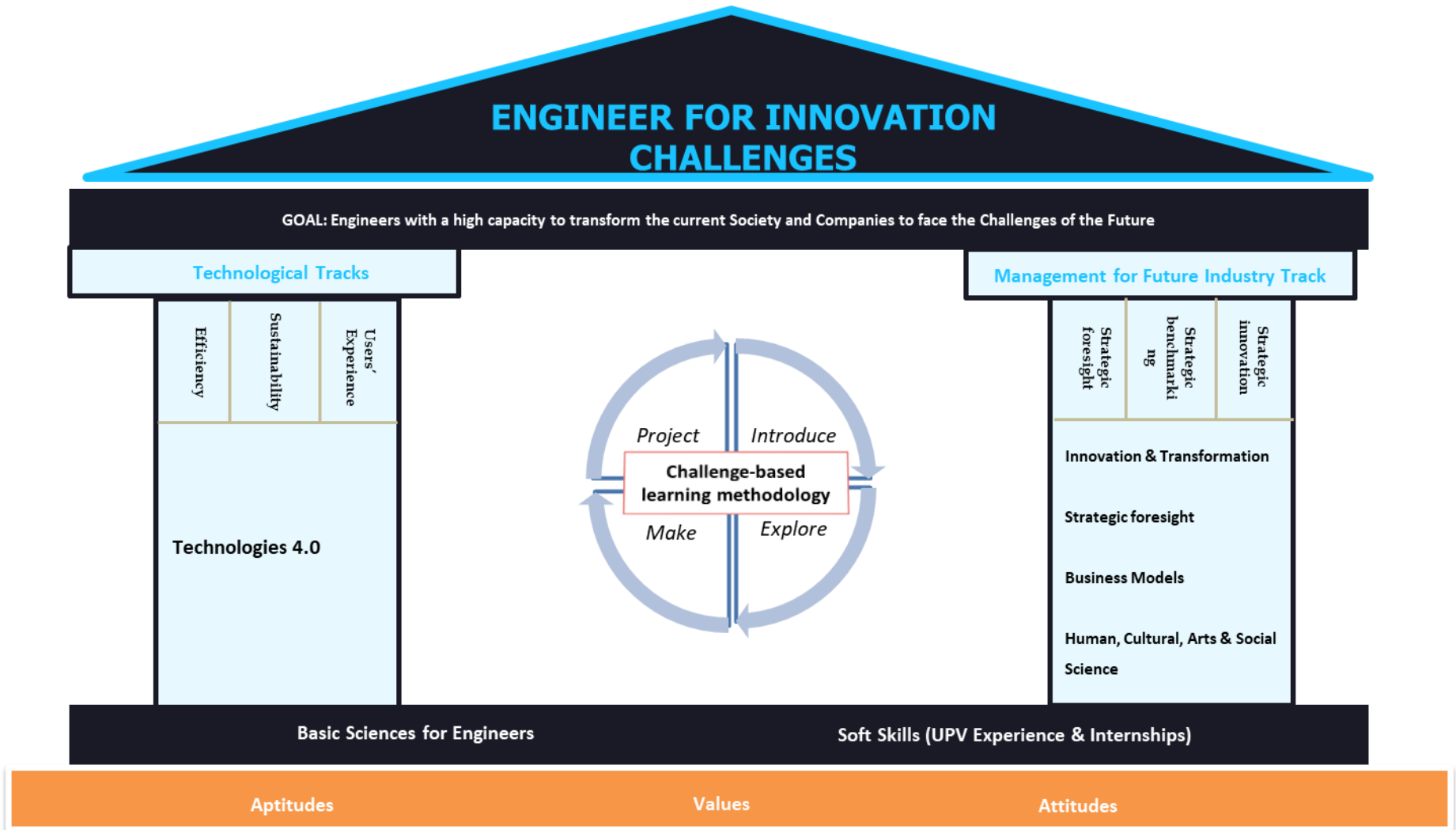


## 4. The proposed model

INNSAI

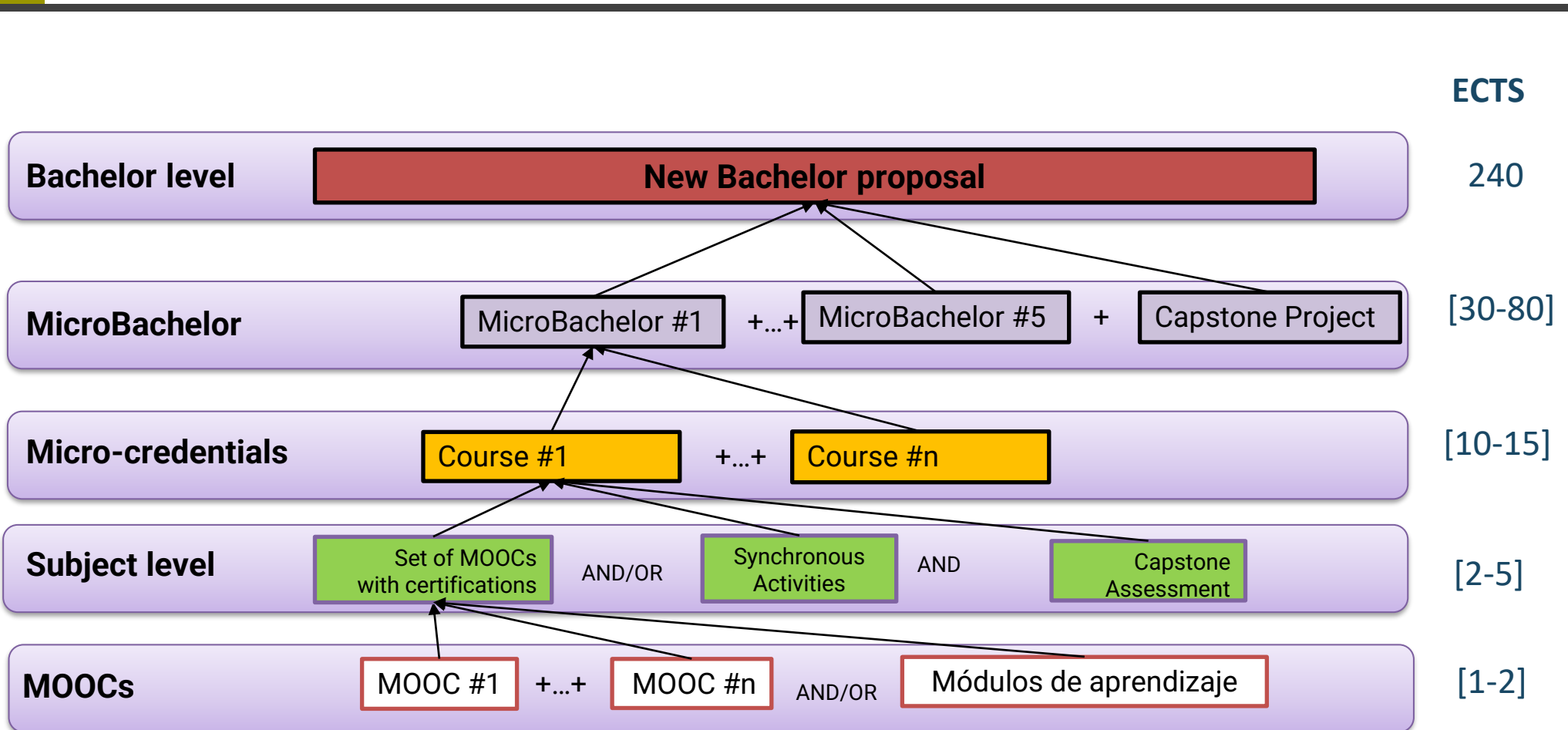


# Systems Engineering & Innovation Challenges

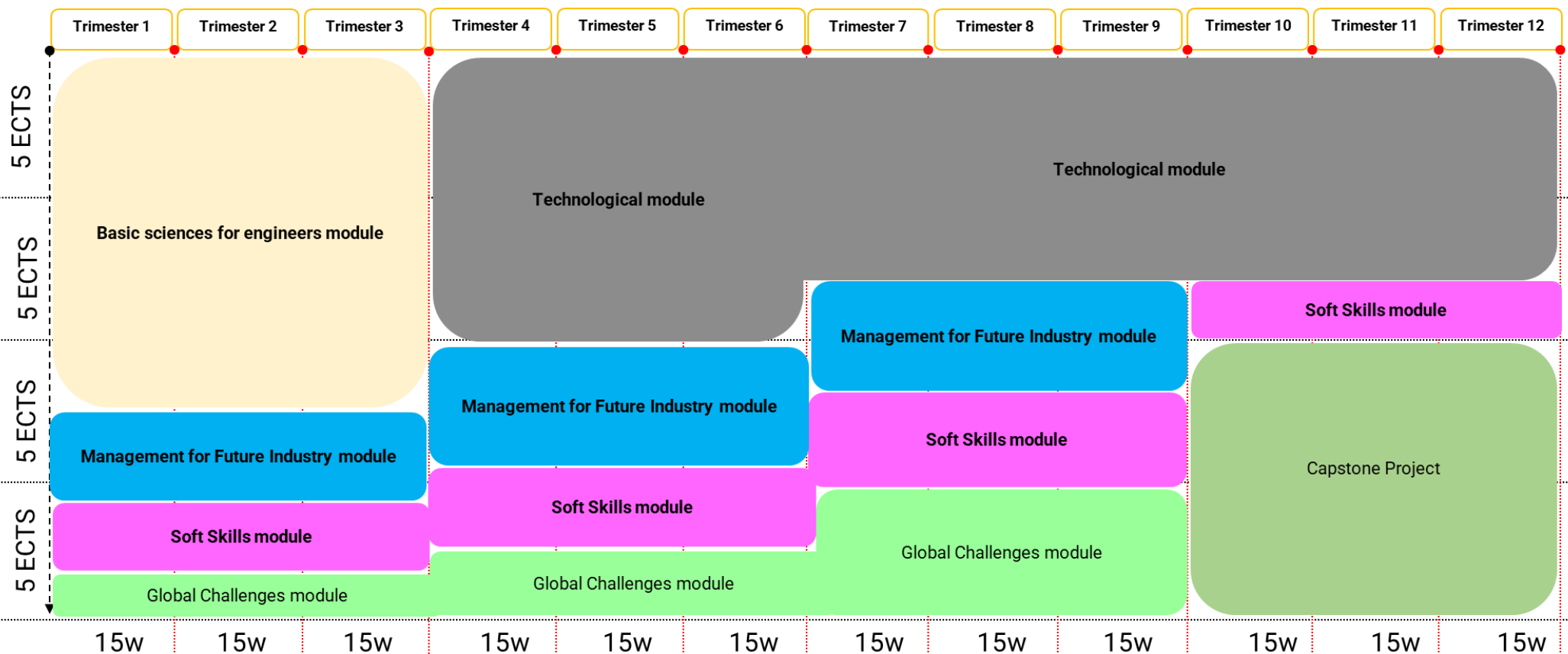




# Modular structure



# Curricular structure



# New timing - Trimestre, Sprints & Challenges

Año	1		
Trimestre	1	2	3
	Mathematics I 5 ECTS	Mathematics II 5 ECTS	Statistics II 5 ECTS
	Physics I 5 ECTS	Statistics I 5 ECTS	Physics II 5 ECTS
	Computer Science I 5 ECTS	Computer Science II 5 ECTS	Economics 5 ECTS
	Philosophy of Technology and Engineering 3 ECTS	Ethics & Corporate Social Responsibility 4 ECTS	
	Online learning skills		
	Global Challenge		

- Human, Cultural, Artistic & Social Sciences for engineers
- **[Philosophy of Technology and Engineering]:** Ethics of Technology, Professionalism, role and position of the engineer in society, differences and similarities between technology, science and philosophy, ethical decision making.
  - **[Ethics & Corporate Social Responsibility]:** Applied Ethics, corporate values, professional ethics and social and professional, Ethical Values, Engineering Values, Corporate Social Responsibility (GRI, SDG, SA8000, ISO26000...)
  - **[Creative Culture]:** Creativity, Aesthetics, Art History, Disruption, Perception, Motivation, Holistic, Innovation, Cultural Change, Resistance to Change, Dominant Logic, Framing, open Thinking, Empathy
  - **[Digital Anthropology and User Centered Design]:** Communication, Cognitive Paradigm, Qualitative Analysis, Emotional Intelligence, Attitudinal Behavior, Social & User Behavior, Buyer Persona, Usability, User Centered Design

Year	1														
Trimestre	1														
Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	04/03/2024	11/03/2024	18/03/2024	25/03/2024	01/04/2024	08/04/2024	15/04/2024	22/04/2024	29/04/2024	06/05/2024	13/05/2024	20/05/2024	27/05/2024	03/06/2024	10/06/2024
Sequential courses	Mathematics I 5 ECTS					Computer Science I 5 ECTS					Physics I 5 ECTS				
Transversal courses	Philosophy of Technology and Engineering 3 ECTS														
	Online learning skills + Creative thinking 5 ECTS														

# Soft skills

1	Basic	☹️
2	Intermediate	😐
3	Advanced	😊
4	Expert	☀️
5	Not applicable	X

- Innovative module where students will have to acquire and demonstrate that they have achieved
  - All the learning outcomes of the **New Framework of Transversal Competences** in official degree
  - **Other learning outcomes not included** in the current official framework.
- **Establishment of a PoliSSkills - Competences Catalogue to Generate a Competences Curricula**
  - With learning outcomes of different levels (Basic, Intermediate, Advanced)
  - With the establishment of rubrics similar to the old UPV transversal competency framework with discrimination of items and levels.
- **Immersive and experiential learning process** with external assessment and internal assessment:
  - In sports, cultural activities, generación espontánea, ONG and/or Internships, students will have to acquire the learning outcomes of the PoliSSkills
  - Evidences (Portfolios, Videos, Reports, etc.) will have to be uploaded in Poliformat and a set of professors will have to assess the reached level.
- Students will receive a **“Soft Skills Passport”**



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