UNIVERSITAT POLITÈCNICA DE VALÈNCIA

BACHELOR'S DEGREE IN

Systems Engineering and Management for Innovation Challenges

3rd Edition

seamic
you win, the World wins

ENHANCE

UPV

seamic

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

240 ECTS

4 YEARS

MODULAR

HYBRID/
FACE-TO-FACE

www.seamic.upv.es

100 SEATS

Bachelor's Degree

Bachelor's Degree in ***Systems Engineering and Management for Innovation Challenges (SEAMIC BSc) - 3rd Edition***

Teaching and Learning Methodologies

Synchronous and asynchronous online learning of theoretical and technical concepts. Face-to-face, immersive and experiential learning based on Challenges for the design of innovative solutions and internships in Companies, UPV Factory Design, or NGOs. You select those training objectives to be enhanced in the collaborating entity, generating a curriculum for the work market.

Academic Staff

Best professors and researchers of the UPV, Mentors, leading business professionals, and CEOs of technology start-ups, will guide you during your journey.

Modular Structure

After the 1st year, choose the branch of technology you like best and build your skills in a personalized way.

SEAMIC's Principles: Flexibility, Mobility and Commitment.

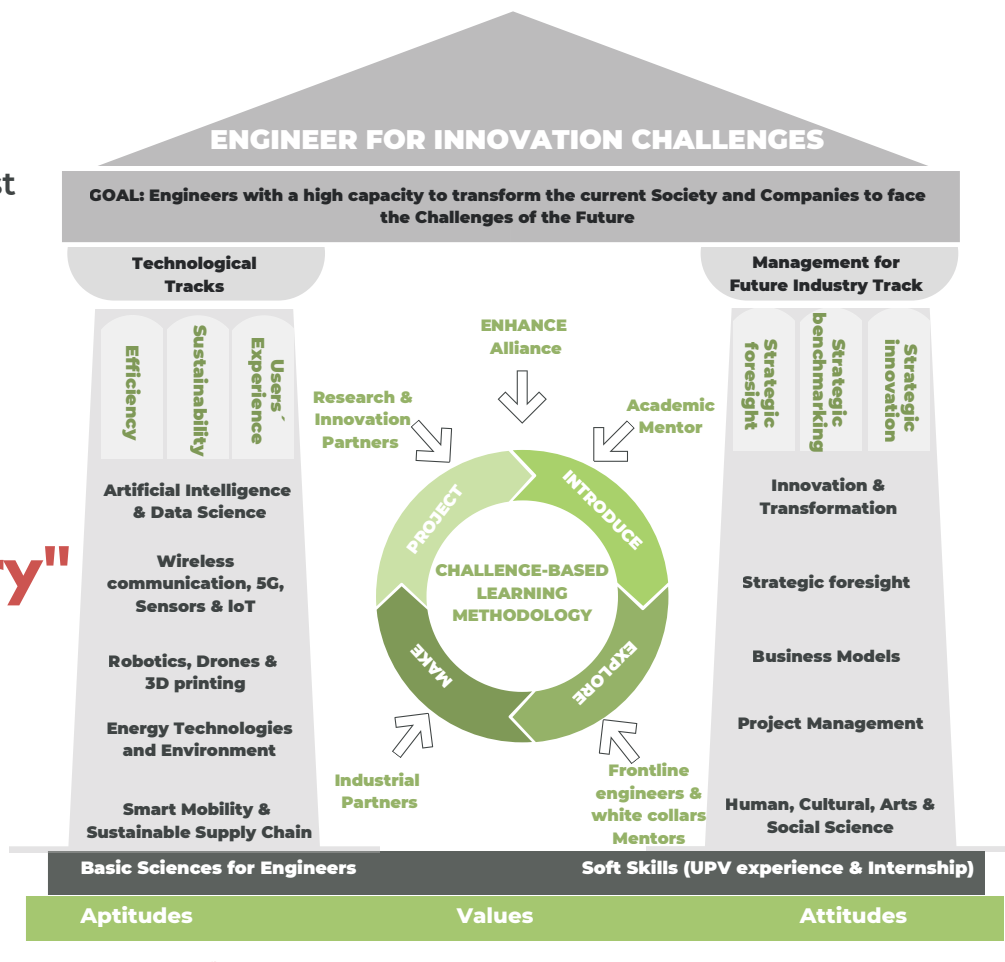
Limited Seats

Competitive selection process

Scholarships & "Apprentice Itinerary"

Students will be able to follow an Apprenticeship Itinerary of "Recurrent Training in Enterprises".

A scholarship and sponsorship programme will be offered by collaborating companies to help you finance your studies.



UPV

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OUR PHILOSOPHY: YOU DECIDE YOUR FUTURE

The goal

Seeks to educate the upcoming cohort of versatile engineers through a three-fold approach:

- Delving into theoretical and technological subjects via online coursework.
- Gaining hands-on, immersive, and experiential cross-disciplinary skills through in-person training.
- Collaborating in the design of innovative solutions in response to future business challenges.

How?

In English, on campus within our student community and more than 50 different nationalities, in a multidisciplinary and multicultural environment.

**Teamwork to design innovative solutions.
A differential approach based on multidisciplinary teams and Challenge-based Learning.**

Sensitive to disruptive, differential, non-linear and sustainable innovation

Flexible and customisable structure

What for?

Innovate with other students in the university's associations or contribute to Top-edge technological companies.

Choose what you want to study from the latest Industry 4.0 technologies

Encourage intra-entrepreneurship, the generation of technology-based startups, or your next postgraduate studies.

Promote collaborative and multidisciplinary designs of innovation solutions

Fosters students' self-learning, self-regulation and knowledge, directed towards lifelong, proactive and independent learning.

WHY STUDY seamic ?

Towards an innovative approach for active learning that:

Anticipates the social and entrepreneurial future in STEAM:

During your journey, you will acquire solid technological knowledge through deep, immersive, continuous and collaborative learning, which companies will highly demand in the future.

Centres on learning based on innovation challenges:

SEAMIC is founded on innovation challenges for companies and society as a key factor.
You will participate in projects that implement real, global and innovative solutions in the new sectoral business models of the future.

Innovation Areas


Efficiency


Sustainability


Users' Experience

Allows the student to personalise the academic curriculum:

You choose your path, with a versatile offer, structured in modules and subjects, which will allow you to align your studies with your personal motivations, in a context of business reality.

Enables to lead the process of technological transformation:

We focus on creating and implementing real, global, and innovative solutions, leading the technological transformation processes that society needs, and generating real strategies oriented by the new paradigms of competitiveness that the future will bring.

Maximise labor market experiences:

Ensure maximum employability through internship opportunities in companies or organisations or undertake your own business.

preparing you for the future
preparing you for the future

UNIVERSITY CONTEXT

UPV researches, develops and patents

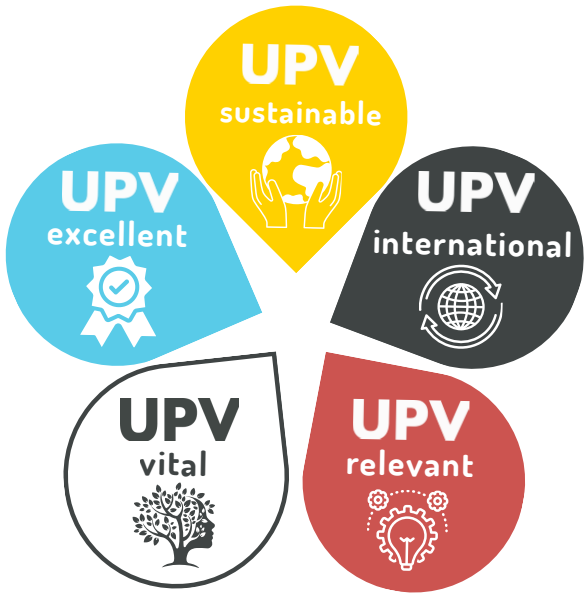
UPV: Spain's leading technological university

In a Mediterranean environment, the UPV campuses provide all the services you may need at affordable costs and in a space designed to develop the students' talents.

UPV SIRVE

5 Strategic Goals:

The UPV_SIRVE strategy brings UPV to society offering innovative solutions to societal changes through its 5 strategic goals:



UPV: in the rankings

QS World University Rankings 2023

Best university in the Valencian Community, top 10 in Spain and among the 400 most outstanding universities in the world

THE: Times Higher Education

Among the 300 universities with the greatest social and economic impact in the world, and ranked in the top 100 for educational quality, innovation and infrastructure, and responsible production and consumption.

more info on the rankings here:

http://www.upv.es/rankings/index-en.html

Why should you come?

UPV

UPV

Spain's best technological university

Shangai Ranking

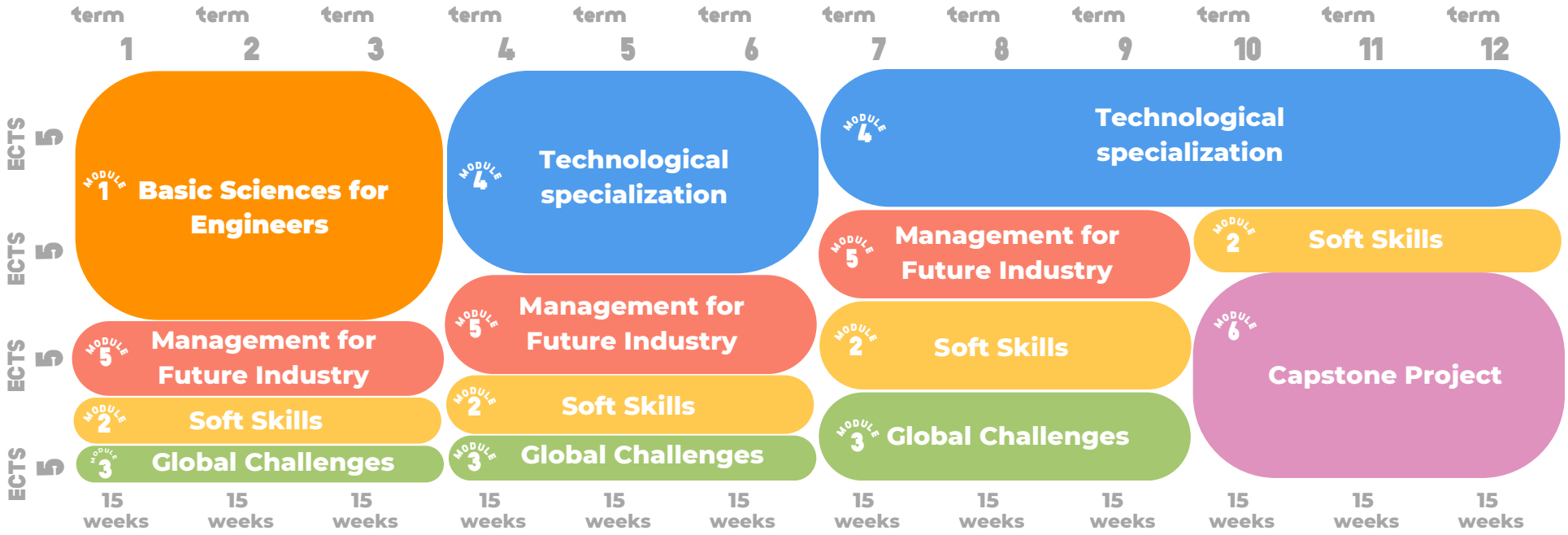
seamic

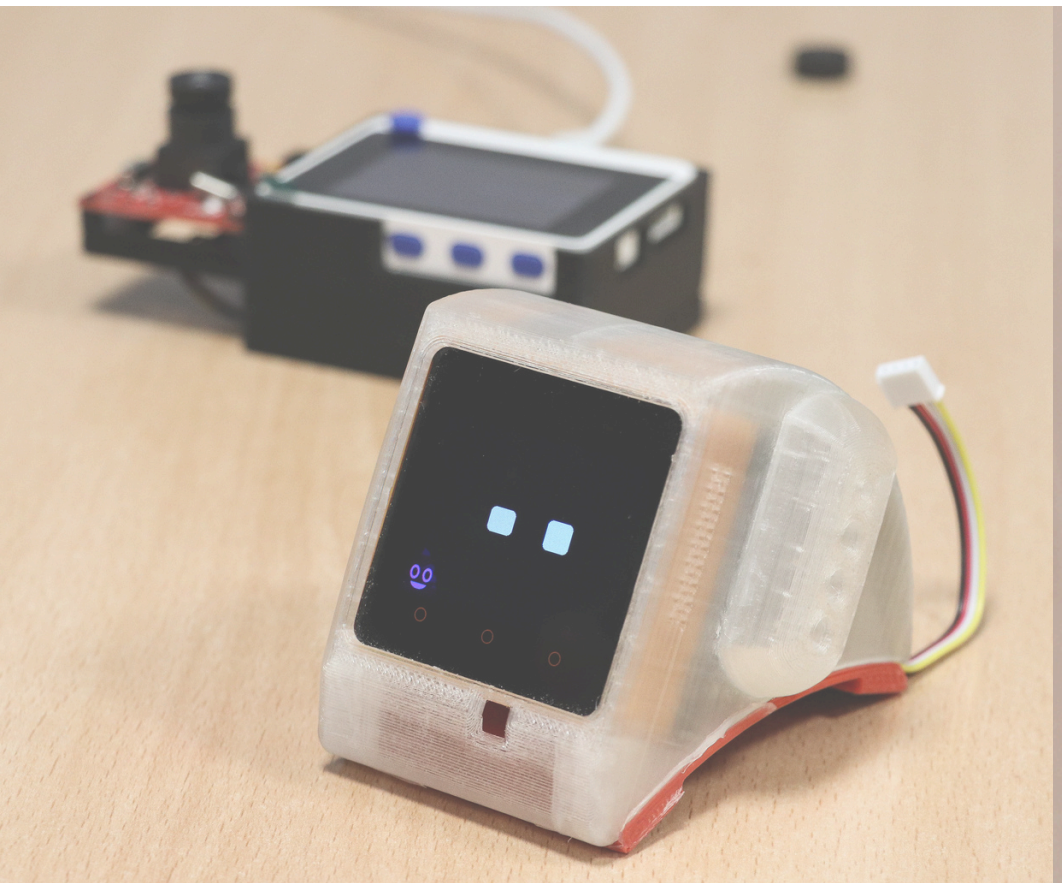
DEGREE STRUCTURE

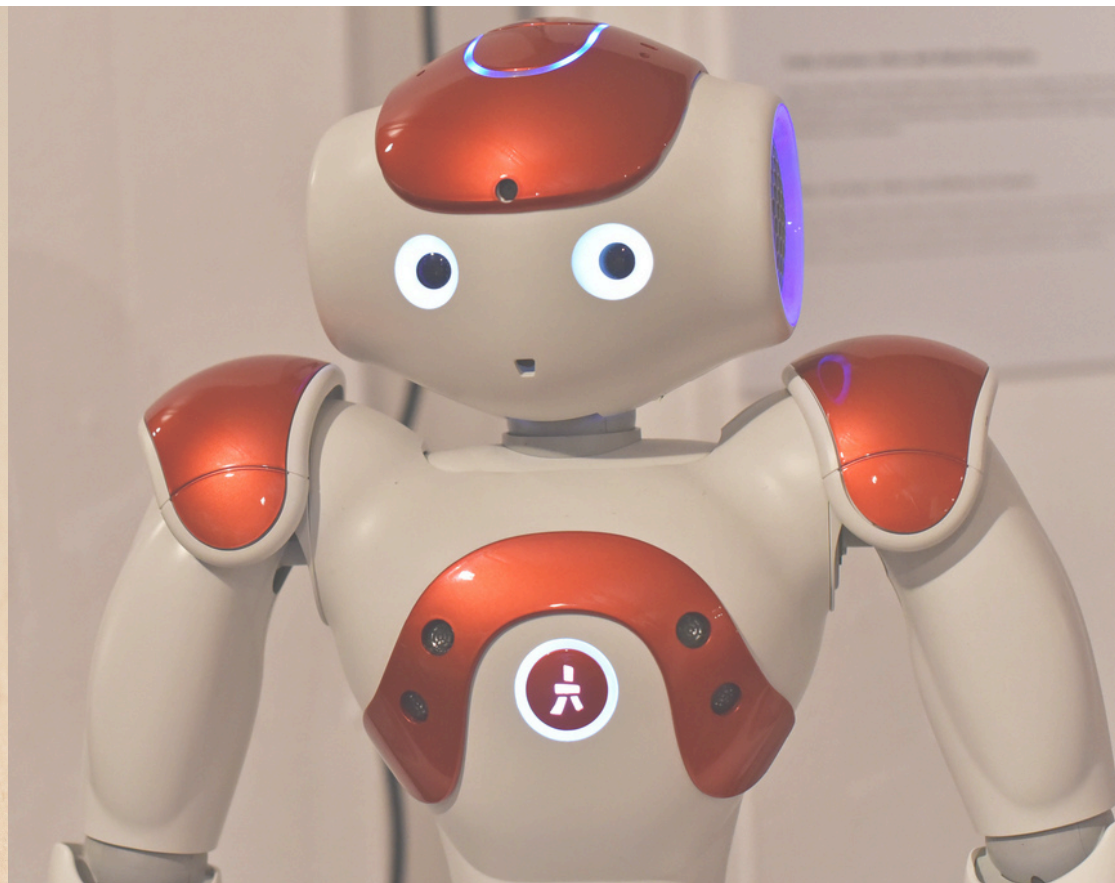
Modular Structure

The structure of the degree is modular and will allow you to take the whole degree or only some modules and/or subjects that will be recognised as a university extension diploma or micro-credentials:

Curricular Structure







DEGREE STRUCTURE

To obtain your Bachelor's in Systems Engineering and Management for Innovation Challenges, you will need to pass all modules regardless of the technologies you select.

MODULE 1 — Basic Sciences for Engineers

Core

YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL ECTS
40				40

Develop basic engineering skills. Mathematics, Physics, Computer Science, and Statistics are part of the core subjects.

MODULE 2 — Soft Skills

Elective

YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL ECTS
5	10	10	5	30

Build your Soft Skills passport during your 4 years with theoretical courses and through field internships and experiences.

MODULE 3 — Global Challenges

Core

YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL ECTS
3	5	15		23

Tackle innovation challenges with a progressive immersion, which prepares you for the Final Degree Project - Capstone Project (Module 6).

MODULE 4 — Technological Specialization

Elective

YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL ECTS
	30	25	25	80

Select the field of studies you like the most and train in the new impact Industry 4.0 technologies from the technological specialization modules offered.

- **Artificial Intelligence & Data Science.**
- **Robotics, Drones and 3D-printing.**
- **Energy Technologies and Environment.**
- **Smart Mobility & Sustainable Supply Chain.**
- **Wireless communication, 5G, Sensors & IoT.**

MODULE 5 — Management for Future Industry

Core

YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL ECTS
12	15	10		37

Learn new business models to transform your environment

MODULE 6 — Capstone Project

Core

YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL ECTS
			30	30

You can show, through your degree thesis, that an innovative solution has been materialised in a proof of concept.

Bachelor's Degree Model

ENGINEER FOR INNOVATION CHALLENGES

GOAL: Engineers with a high capacity to transform the current Society and Companies to face the Challenges of the Future

Technological Tracks

- Efficiency
- Sustainability
- Users' Experience

- Artificial Intelligence & Data Science
- Wireless Communication, 5G, Sensors & IoT
- Robotics, Drones & 3D Printing
- Energy Technologies & Environment
- Smart Mobility & Sustainable Supply Chain

ENHANCE Alliance

- Research & Innovation Partners
- Academic mentor
- Industrial Partners
- Frontline engineers & white-collars Mentors

CHALLENGE-BASED LEARNING METHODOLOGY

PROJECT → INTRODUCE → EXPLORE → MAKE

Management for Future Industry Track

- Strategic Foresight
- Strategic Innovation
- Strategic Innovation

- Innovation & Transformation
- Strategic Foresight
- Business Models
- Project Management
- Human, Cultural, Arts & Social Science

Basic Sciences for Engineers | **Soft Skills (UPV experience & internship)**

Aptitudes | **Values** | **Attitudes**

UPV UPV UPV UPV

Approaches to innovation challenges

seamic

Industry 4.0 Technologies

Technological entrepreneurship

EXPLORATION

awareness-raising

The student "**sees**" the real solutions, **"associates"** the necessary basic knowledge and **"chooses"** what he or she likes the most.

Key areas for innovation focus

Innovation challenges

APPROACH

identification

The student "**selects**" among the 3 focus areas (efficiency, sustainability, customer experience) and "**explores**" different innovation typologies and technologies.

Proof of concept

Business plan

SPECIALISATION

contribution

The student **"selects the sector"** to develop the capstone project. The aim is to "**find a job**" in the sponsoring company while working in a multidisciplinary environment with other specialists.

Principles

Flexibility

Throughout the 4 years, students **choose their training plan** according to their motivations.

Mobility

The student can enroll the theoretical contents at other **ENHANCE Universities**.

Commitment

Students **learn by doing** obtaining as learning outputs **global market solutions** relevant to business and society.

University Extension Diplomas

Students who wish to opt for something other than the SEAMIC can take the university extension diploma(s) - DEU - of their choice. To be admitted to the university extension diplomas, they must have taken the equivalent courses of the basic science module and be accredited and validated per the regulations in force. In addition, each DEU will be structured into subjects that will be part of micro-credentials.

MODULE 2 — DEU SOFT - University Extension Diploma in soft skills for systems engineering

SUBJECT		ECTS
2.1.	Soft skills for management and innovation	10
2.2.	Communication skills	10
2.3.	International and Intercultural Team- working Skills	10

MODULE 4 — DEU INF. University Extension Diploma in Artificial Intelligence & Data Science

SUBJECT		ECTS
4.1.	Computer Science Fundamentals	20
4.2.	Statistical models for decision making	10
4.3.	Advanced Statistics models for Data Analysis	10
4.4.	Support techniques for Data Science	10
4.5.	Artificial Intelligence	10
4.6.	Machine Learning	10
4.7.	Optimization methods	10

MODULE 4 — DEU ENERGÍA. University Extension Diploma in Energy Technologies and Environment

SUBJECT		ECTS
4.21.	Fundamentals of energy technologies	20
4.22.	Renewable energy technologies and sustainability	15
4.23.	Energy systems and machines	15
4.24.	Energy technologies	15
4.25.	Energy management and environment	15

MODULE 4 — DEU ROBOT. University Extension Diploma in Robotics, Drones & 3D-printing

SUBJECT		ECTS
4.1.	Computer Science Fundamentals	20
4.41.	Introduction to Robotics	20
4.42.	Software, Automation and Computer Vision in Robotic	25
4.43.	Artificial intelligence for robotics	15
	OR	
4.44.	3D Modelling and Printing	15
	OR	
4.45.	Drones	15

MODULE 5 — DEU MNGT - University Extension Diploma in Management for the Industry of the Future

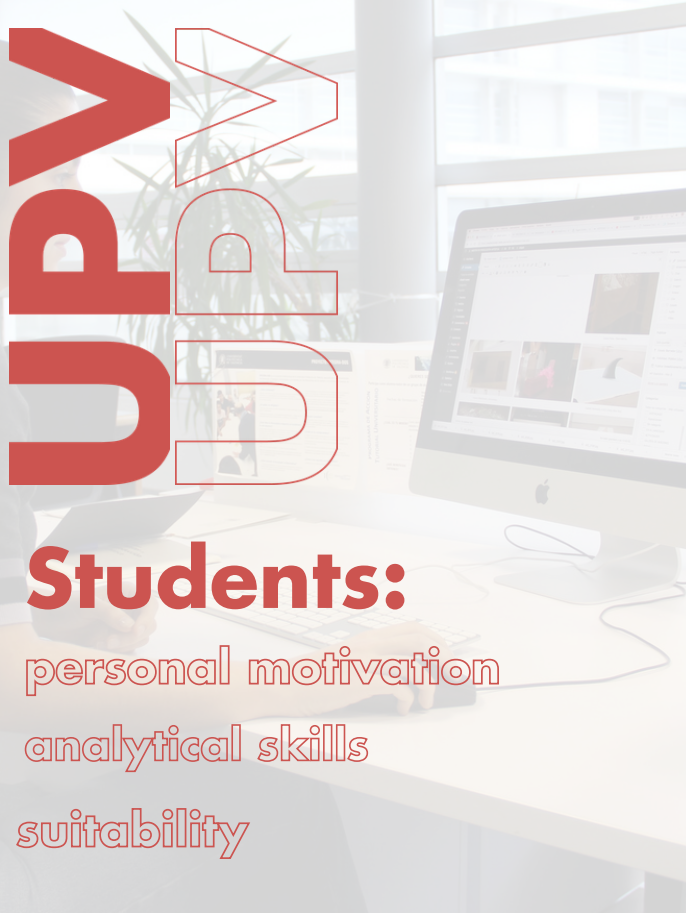
SUBJECT		ECTS
5.1.	Human, Cultural, Artistic & Social Sciences for engineers	7
5.2.	Business Models	10
5.3.	Strategic Foresight	5
5.4.	Innovation and transformation	10
5.5.	Project Management	5

MODULE 4 — DEU TELECO. University Extension Diploma in Wireless communication, 5G, Sensors & IoT

SUBJECT		ECTS
4.31.	Telecommunications Engineering Technologies	20
4.32.	Digital systems	15
4.33.	Telematics	10
4.34.	Sensors and Internet of Things	20
4.35.	Wireless communications and 5G	15

MODULE 4 — DEU MOVILIDAD. University Extension Diploma in Smart Mobility & Sustainable Supply Chain

SUBJECT		ECTS
4.1.	Computer Science Fundamentals	20
	OR	
4.31.	Telecommunications Engineering Technologies	20
4.11.	Operations management	15
4.12.	Optimisation and Simulation in Transport and Logistics	10
4.13.	Introduction to Smart Mobility	20
4.14.	ICT for Smart Mobility and Supply Chain	15



Students:

personal motivation

analytical skills

suitability

Tuition Fees

9.000 €/year

Standard price: €9,000/academic year

6.000 €/year

Reduced price: €6,000/year for students from the European Union.

Requirements

- Hold the Spanish Baccalaureate diploma or equivalent; the European Baccalaureate, the International Baccalaureate diploma, or hold a Higher Technical Vocational Training qualification. (1)
- Be over 40 and have professional experience and no diploma. (1)
- Certify a B2 English level according to the Common European Framework of Reference for Languages (CEFR) or pass an equivalent test before you start.
- Reach or exceed the admission scores.

(1) For students with specific educational needs, appropriate support and counselling services will be established.

Admission Process

The students' regular admission will be carried out online and will include preselection, selection and admission phases:

Preselection Phase

LOADING ... 0 %

Step 1: Apply online in the admission process.

If interested in the degree course, enrol in the admission process:

- Upload the documentation that proves that you will be able to meet the minimum admission requirements
- Pay the admission exam fees (200€).

November to July [Regular Admission]

September/October [Late admission if spots remain]

LOADING ... 20 %

Step 2: Take the specific exams required for admission to the degree programme:

- Mathematics specific test: 2 points
- Physics specific test: 2 points
- English test: 1 point

If you meet the requirements, you are shortlisted.

Starting in December [Regular admission]

September/October [Late admission if spots remain]

Selection Phase

LOADING ... 40 %

Step 3: Take the psychometric test and demonstrate your motivation with an interview: .

- Psycho-technical test: 1 point
- Interview*: 2 points

*Design and Record an original pitch-elevator in English

Starting in December [Regular admission]

September/October [Late admission if spots remain]

LOADING ... 60 %

Step 4: Complete your registration.

Upload your academic record approved by the Spanish Ministery of Education and the required documentation to be pre-accepted.

- Academic record : 6 points

Starting in January [Regular admission]

September/October [Late admission if spots remain]

Admission Phase

LOADING ... 80 %

Step 5: Finalise your registration.

If you are pre-accepted to the degree and among the selected candidates, pay the fees to secure your seat for the next academic year.

Before mid-July [Regular admission]

September/October [Late admission if spots remain]

LOADING ... 100 %

Enrol and begin the course

In September, we'll be waiting for you at the Valencia Campus.

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Waiting for you

seamic