Photonics, Images, Communicaion, Signal, Sciences of Light (PICSEL)

Presentation

Learning objectives

PICSEL aims to train engineers who can meet the needs of the emerging digital society: explosion of embedded systems, communicating objects, growing needs in information transmission and processing, multiplication of smart devices, growing importance of digital simulation, development of new manufacturing technologies, etc. The sciences related to the PICSEL themes are part of the six Key Enabling Technologies identified by the European Commission, which considers them to be the main drivers of innovation.

Description of the programme

To meet these challenges, PICSEL offers a program mainly based on electives that will allow students to build personalized pathways focused on Photonics and Information and Communication Sciences, with strong skills in the key areas of imaging and photonics, and an in-depth knowledge of the underlying physics.

Generic central skills and knowledge targeted in the discipline

Photonics, Image, Communication and Signal technologies are characterized by their ability to irrigate a large number of industrial sectors and application areas, as well as their high R&D intensity. They feed very competitive and fast-growing markets (environment, health, automotive, aeronautics, etc.), and cover various fields such as connected systems, autonomous vehicles, virtual reality, medical imaging, etc.
In these sectors, the PICSEL engineer will be able to address both the management of complex projects thanks to his or her generalist skills and vision of the field, as well as cutting-edge R&D thanks to his or her conceptualization and problem-solving skills, and a mindset trained in innovation.

Total des heures **0h**

List of courses

	Nature	CM	TD	TP	Crédits
Temps 1	Module				
Fundamentals of Photonics	Module	80h		20h	8 credits
Smarts Systems	Module	70h	16h	14h	8 credits
Telecom and IoT	Module	60h	10h	30h	8 credits
	Nature	CM	TD	TP	Crédits
Temps 2	Module				
Advanced Imaging for Biomedical Applications	Module	70h	12h	10h	4 credits
Images: Formation, Perception & Representation	Module	66h	6h	22h	4 credits
Data science and statistical learning	Module	48h	14h	18h	4 credits