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**

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List of courses

	Nature	CM	TD	TP	Crédits
Temps 1	UE				4 credits
Fundamentals of Photonics	UE	80h		20h	
Smarts Systems	UE	70h	16h	14h	
Telecom and IoT	UE	50h	30h	10h	
	Nature	**CM**	**TD**	**TP**	**Crédits**
Temps 2	UE				4 credits
Advanced Imaging for Biomedical Applications	UE	70h	12h	10h	
Images: Formation, Perception & Representation	MODULE	70h	2h	28h	
Science des données et apprentissage statistique	UE	50h	12h	18h	
	Nature	**CM**	**TD**	**TP**	**Crédits**
Temps 3	UE				4 credits
Ingénierie Quantique et Technologies Emergentes	UE	56h	24h	10h	
Systèmes embarqués	UE	40h	20h	40h	
Technologies Spatiales	UE	70h	10h	20h	
	Nature	**CM**	**TD**	**TP**	**Crédits**
Projet PICSEL	UE				