

Programme CPE Lyon

Admission to CPE Lyon	
After two years of higher education in mathematics, physics and languages	120 ECTS

First year at CPE Lyon	
(66 ECTS minimum required 60 ECTS)	
<u>Core programme</u>	(ECTS)
Basic electronics	3
Elementary applications of electronic components	3
Electronics of linear systems	3
Basic elements of operational amplifiers	3
Elementary integrated circuits	3
Basics of digital electronics	3
Structured programming in C	3
Advanced programming in C	3
Object-oriented programming in C++	3
C++ programming project	3
Quantum mechanics and statistics	3
Semiconductor and basic device physics	3
Physical optics and sensors	3
Electrical engineering	3
Applied mathematics	6
Probabilities	3
Signal and linear systems	3
Economics, starting up a business project (PCE)	3
Foreign languages and international cultures	6
Social sciences	3
<u>One month internship in industry</u>	3

Second year at CPE Lyon	
<u>Core programme</u>	(54 ECTS)
Analogical devices	3
Advanced digital electronics	3
Microprocessors	3
Practical work: conception of an electronic system	3
Operating systems	3
Concurrent programming	3
Networks and protocols	3
Introduction to embedded systems	3
Databases	3
Analogue functions	3
Power electronics	3
Digital signal processing	3
Random signals	3
Optimal receiver and automation	3
Optoelectronics	3
Management	3
Foreign languages and international cultures	6
<u>Options, Scientific and Technical subjects (choice of 4)</u>	(Total of 12 ECTS)
Informatics of on-board systems	3
Graphics et algorithms	3
Techniques de compilation	3
Numerical optimization	3
Introduction to Java	3
Image processing	3
Digital Filtering	3
Electronics of on-board systems	3
Physics of components	3
Programmable logic devices and logic synthesis	3
Interconnexion and administration of networks	3
Television systems	3
Micro - Nanotechnologies – Applications	3
Sensors and process measurements	3
Knowledge engineering	3
Image synthesis	3
Introduction to data analysis	3
<u>Industrial placement</u>	9

Third year at CPE Lyon	
<u>Core programme</u>	(12 ECTS)
Foreign languages and international cultures	3
Social sciences	3
Marketing, patents, management, economic awareness	3
Management studies	3
<u>Optional Programme, choice 1 of 4</u>	(ECTS)
<u>Distributed computer systems</u>	(Total 21 ECTS)
World wide web programming	3
XML: language and programming	3
Distributed systems and the J2EE framework	3
Parallel computing and systems and network security	3
Distributed computer system programming project	9
<u>Telecommunications</u>	(Total 21 ECTS)
Digital Communications	6
Wireless networks and mobility	3
Multimedia communications/ Network and system security	3
Networks and advanced protocols	3
Design of a network solution	6
<u>Image and Algorithms</u>	(Total 21 ECTS)
From calibration to acquisition	3
Medical Imaging : from modelling to reconstruction	3
Image Synthesis	3
Advanced Image Processing and Analysis	3
Digital Communications	3
Research mini-project	6
<u>Electronics and micro-electronics</u>	(Total 21 ECTS)
Design of analogical integrated circuits	3
Design of digital integrated circuits	3
Behavioural description of microelectronic systems	3
Specialized microprocessors and advanced architectures	3
Introduction to the design of microsystems	3
Digital communications and Process Control	3
Project in microsystems – complex circuits	3
<u>Final year project in industry</u>	30