

Polytech Marseille, School of Engineering

Courses taught in English

Biological Engineering

Course title	ECTS	Year	Semester	Language
Biotechnology projects <i>Biotechnology report</i> <i>Applied bibliography project</i> <i>Applied bioinformatics</i>	6	4	Spring	English
Practical work and Conferences <i>Genomic practical work</i> <i>Conferences</i>	2	4	Spring	English English / French <i>(according to lecturer)</i>
General education and languages <i>Scientific poster in English</i> <i>French foreign language</i>	3	4	Spring	English English / French <i>(according to lecturer)</i>
Theoretical modules of choice (6 out of 7 modules) <i>Food design and process</i> <i>Novel and functional foods</i> <i>Biomass conversion an bioenergy</i> <i>Protein engineering</i> <i>Industrialization of bioprocess</i> <i>Microbiological expression systems</i> <i>ImmunoTechnology</i>	9	4	Spring	English
2-3 months internship in a research laboratory	10	4	Spring	Possible placement with an English-speaking supervisor
Industrial application work <i>Industrial application work in biotechnology</i>	9	5	Fall	English
Specialisation courses <i>Applied biocatalysis</i> <i>Molecular diagnostic</i> <i>Biotechnology and innovation</i>	6	5	Fall	English
Languages and social science, humanities, economics, law <i>English</i> <i>Project management</i> <i>Labour Law</i> <i>Quality control approach</i>	9	5	Fall	English English / French <i>(according to lecturer)</i> English English

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Application / Practice lab (choose 3) <i>Enzyme production by fungi</i> <i>Environmental genomic</i> <i>High-throughput protein production</i> <i>Cancer biology and tumoral markers</i> <i>Microalgae cultivation and valorization</i> <i>Molecular interactions</i> <i>Molecular modelling and drug design</i> <i>Nanobody engineering</i>	6	5	Fall	English
Industrial valorisation internship	30	5	Spring	Possible placement with an English-speaking supervisor

Computing

Course title	ECTS	Year	Semester	Language
Langages, système et réseaux avancés <i>Réseaux avancés (étude de cas - projet)</i> <i>Systèmes et algorithmes répartis</i> <i>Sécurité informatique</i>	6	4	Fall	French
Conception et développement Avancés 1 <i>Analyse et conception objets</i> <i>Programmation distribuée</i> <i>Projet développement 1</i>	8	4	Fall	French
Mathématique pour l'Informatique 2 <i>Probabilités</i> <i>Statistiques</i> <i>Optimization</i>	6	4	Fall	French French English
Introduction à la réalité mixte <i>Graphical programming</i> <i>Images analysis</i> <i>3D geometric modeling</i>	6	4	Fall	English
Humanité et langue 3 <i>Challenge S7</i> <i>Gestion commerciale et marketing</i> <i>Management de la qualité</i> <i>Management de Projet</i> <i>Anglais</i>	4	4	Fall	French
Humanité et langue 5 <i>English</i> <i>Projet Recherche</i>	7	5	Fall	English French
Conception et développement d'applications 2 <i>Système d'information</i> <i>Cloud computing</i> <i>Cybersécurité</i>	6	5	Fall	French
Travaux d'application industrielle	7	5	Fall	French
Specialization and Application (Pick 4 in one color and 1 in the other)	10	5	Fall	

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<i>Apprentissage Profond</i>				French
<i>Computer Vision and Automatic Processing</i>				English
<i>Fondements et Applications de Big data</i>				French
<i>Web sémantique</i>				French
<i>Entrepôts de données</i>				French
<i>Mixed reality</i>				English
<i>Augmented reality</i>				English
<i>Virtual reality</i>				English
<i>Creation of virtual environments</i>				English
<i>AI & VR</i>				English

Mechanics and Energy

Course title	ECTS	Year	Semester	Language
Mechanics and Energy : Fundamentals <i>Continuum Mechanics</i> <i>Thermodynamics</i> <i>Elasticity-Strength of Materials</i> <i>Introduction to Fluid Mechanics</i> <i>Practicals</i>	13	3	Fall	French
Tools for the engineers <i>Mathematics for Engineering</i> <i>Algebra</i> <i>Information and Communication Technologies</i> <i>IT for Engineering</i> <i>Introduction to CAD and BIM</i> <i>Measurement: Pressure, Flow rate, Temperature</i>	11	3	Fall	French French French French/ English (according to lecturer) French French French
Languages and social science, humanities, economics, law 1 <i>English</i> <i>MOUV project (Openness project with interdisciplinary teams)</i> <i>Intercultural management</i> <i>Organization and operation of the companies</i> <i>Numerical responsibility</i>	6	3	Fall	English French French French French
Energetics <i>Introduction to Heat Transfer</i> <i>Thermodynamics Machines</i> <i>Practicals</i>	6	3	Spring	French French/ English (according to lecturer) French

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Mechanics <i>Mechanics and Real Fluids</i> <i>Mechanics of Real Fluids</i> <i>Optics and Acoustics</i> <i>Solid and Fluid materials</i> <i>Practicals</i>	10	3	Spring	French
Tools for the engineers <i>Numerical Methods</i> <i>Scientific Calculation and programming</i> <i>Technology</i> <i>Automation</i>	5	3	Spring	French
Languages and social science, humanities, economics, law 2 <i>English</i> <i>MOUV project (Openness project with interdisciplinary teams)</i> <i>Corporate financial management</i> <i>Professional Personal project I</i> <i>Sustainable Development and Societal Responsibility</i>	6	3	Spring	English French French French French
Work placement (internship)	3	3	Spring	Possible placement with an English-speaking supervisor
Energetics : fundamentals <i>Conduction</i> <i>Convection</i> <i>Radiation</i> <i>Phase Change</i> <i>Semi-transparent media</i> <i>Combustion I</i> <i>Practicals</i>	12	4	Fall	French
Fluid mechanics <i>Compressible Fluid Mechanics</i> <i>Hydraulics and Aeraulics</i> <i>Practicals</i>	8	4	Fall	French
Tools for the engineers <i>Computing Tools for Engineering I: Matlab</i> <i>Computing Tools for Engineering II: VisualBasic</i> <i>Process Control</i> <i>Signal Processing</i>	6	4	Fall	French
Languages and social science, humanities, economics, law 3 <i>English</i> <i>Challenge S7</i> <i>Commercial management and marketing</i> <i>Quality Management</i> <i>Project Management</i>	4	4	Fall	English French French French French
Energy components and systems <i>Energy Systems</i>	4	4	Spring	French

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<i>Heat Exchangers</i> <i>Energy Transition</i> <i>Solar Energy</i>				French French French/ English (according to lecturer)
Energy efficiency <i>Building energetics and regulations</i> <i>Heating, Ventilation and Air Conditioning</i> <i>Thermal Simulation of Buildings</i>	4	4	Spring	French
Modelling and simulation in mechanics and energy <i>Numerical method for heat transfers</i> <i>Flow Simulation</i> <i>Turbulence</i> <i>Mechanics of granular media</i> <i>Numerical simulation of industrial systems</i>	8	4	Spring	French
Design office and research project <i>Design office</i> <i>TAPIR : one week doing research with the teachers</i>	4	4	Spring	French French/ English (according to lecturer)
Languages and social science, humanities, economics, law 4 <i>English</i> <i>Responsible Management</i> <i>Innovation and Entrepreneurship</i> <i>Professional Personal Project II</i>	4	4	Spring	English French French French
Work placement (internship)	6	4	Spring	Possible placement with an English-speaking supervisor
Mechanics and Energy <i>Nuclear Engineering</i> <i>Industrial Processes (visits) and high temperature materials</i> <i>Finite Elements Modelling</i> <i>Methods and Decision Support Tools</i> <i>Life Cycle Analysis</i>	8	5	Fall	English
Languages and social science, humanities, economics, law 5 <i>English</i>	3	5	Fall	English
TAl: Ending project with industrial application <i>TAl: Ending project with industrial application</i>	3	5	Fall	English
Optionnal tracks to be chosen: 1 out of 3 <i>INDUSTRIAL AND NATURAL RISKS I</i> <i>Industrial Security</i> <i>Safety of Operation</i>	16	5	Fall	English

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<p><i>Explosive Materials, Explosions Combustion II Simulation of Detonation Waves Radiation, Monte-Carlo Methods and Flow</i></p> <p><i>INDUSTRIAL AND NATURAL RISKS II Propagation of Wildfires and "Small World" Approach Compartmented fires in urban areas Combustion III Simulation of Fires Natural Risks</i></p> <p><i>ENERGY PRODUCTION AND DISTRIBUTION Wind Energy and Tidal Energy Waste and Biomass Valorization Fuel Cells and Geothermal Energy Energy Storage Energy distribution network and Markets</i></p> <p><i>OPTIMIZATION OF ENERGY SYSTEMS Thermal metrology, processes Dynamics of Energy Systems Heat Exchangers II Methods for the Energy Optimization Sustainable, Bioclimatic and Energy Positive Buildings</i></p> <p><i>ADVANCED NUMERICAL MODELING IN FLUID MECHANICS AND HEAT TRANSFERS I</i></p> <p><i>Incompressible Fluid Flow I Two-phase flows Interface Tracking method and Algorithm Thermo-Mechanics Instability in Fluid Mechanics: computations (Ritchmyer-Meshkov) High Performance Computing I</i></p> <p><i>ADVANCED NUMERICAL MODELING IN FLUID MECHANICS AND HEAT TRANSFERS II</i></p> <p><i>Incompressible Fluid Flow II Numerical Modelling of Instabilities Multiphase flow: Gas-Particles High Performance Computing II: parallel computing Finite Volume Method: 1D to multiD</i></p>				
<p>Work placement (internship)</p>	<p>30</p>	<p>5</p>	<p>Spring</p>	<p>Possible placement with an English- speaking supervisor</p>

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Microelectronics and Telecommunication

Course title	ECTS	Year	Semester	Language
Optionnal tracks to be chosen: 1 out of 2 <i>High performance Mobile electronic systems</i> <i>5G</i> <i>Design of microwaves and RF circuits</i> <i>Integration of IP blocks</i> <i>Design of logic audio filters</i> <i>Android programming</i> <i>Autonomous embedded electronic systems</i> <i>Sensors and electronic processing</i> <i>Embedded Java systems</i> <i>ID systems and NFC/Cards</i> <i>Low power electronics</i> <i>Indoor transmissions</i>	10	5	Fall	French
Electronic systems <i>Real time information processing</i> <i>Memories</i> <i>Cryptosecurity</i> <i>Electromagnetic compatibility</i> <i>RF architectures</i> <i>AI material implementation</i>	10	5	Fall	English
Industrial realization project - TAI <i>Laboratory project of industrial realization</i>	6	5	Fall	English
Languages and social science, humanities, economics, law <i>English</i>	4	5	Fall	English
Work placement (internship)	30	5	Spring	Possible placement with an English-speaking supervisor

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