

FACULTY OF SCIENCES
LIST OF ENGLISH-TAUGHT COURSES OPEN TO INTERNATIONAL EXCHANGE STUDENTS

The course list and timetable are subject to be updated each year. Therefore, we ask students to be flexible with their course selections (learning agreement). Please be aware that the number of places may be restricted for some courses. Please check the academic requirements. Proof of language proficiency in English is required : IELTS/TOEFL/TOEIC equivalent to B2 level minimum

Campus	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Charles Luminy	SMISU09	Mathematics in English 1	Bachelor (L3)	3	18 hours	12 hours	Fall	Department of Mathematics	Bachelor program in Mathematics	English B2 level
Luminy	SBYCU12L	Dynamics of living systems	Master 2	3	10 hours	20 hours	Fall	Department of Biology	M.Sc. Integrative Biology and Physiology / Gene to Pathology	English B2 level
Luminy	SBYCU04L	Research project	Master 2	6	48 hours	12 hours	Fall	Department of Biology	M.Sc. Integrative Biology and Physiology / Gene to Pathology	English B2 level
Luminy	SBYCU03L	Stem cell biology : hype and hope	Master 2	6	20 hours	40 hours	Fall	Department of Biology	M.Sc. Integrative Biology and Physiology / Gene to Pathology	English B2 level
Luminy	SBYCU02L	Hallmarks of cancer	Master 2	6	30 hours	30 hours	Fall	Department of Biology	M.Sc. Integrative Biology and Physiology / Gene to Pathology	English B2 level
Luminy	SBYCU01L	Problem based learning in neurobiology	Master 2	6	50 hours of practical works		Fall	Department of Biology	M.Sc. Integrative Biology and Physiology / Gene to Pathology	English B2 level
Luminy	SBIUCU03L	Biological Interaction Networks	Master 2	3	10 hours + 8 hours of practical works	12 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMA07AL	Probabilities and statistics for modelling 1	Master 1	3	6 hours + 6 hours of practical work	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMA07BL	Continuous dynamical systems and modelling : examples	Master 1	3	6 hours + 6 hours of practical work	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU01L	Fundamentals in Biology	Master 1	3		18 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Luminy	SCMAU02L	Professional perspectives for biological systems modelling	Master 1	3		18 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU03L	Genomics	Master 1	3	9 hours	9 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU04L	Discrete modelling of dynamical biological systems 1	Master 1	3	6 hours + 6 hours of practical work	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU05L	Programming and algorithms	Master 1	6	12 hours + 12 hours of practical work	12 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU06L	Computational Biology	Master 1	3	16 hours of Practical works	14 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU08L	Basics in algebra and analysis	Master 1	3	6 hours + 6 hours of practical work	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU10L	Probability	Master 1	3	6 hours + 6 hours of practical work	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU11L	Continuous dynamical systems, linear algebra and modelling	Master 1	6	12 hours + 12 hours of practical work	12 hours	Fall	Centre for Living Systems (CENTURI)	Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMAU12L	Functional analysis	Master 1	3	6 hours + 6 hours of practical work	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU01L	Advanced Biology: Developmental Biology	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU02L	Advanced Biology: Immunology	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU03L	Advanced biology: Neurobiology	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU04L	Biological databases	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU05L	Statistical inference and big data in biology	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU06L	Applications of mathematical modelling	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Luminy	SCMCU07L	Interdisciplinary project in modelling	Master 2	6			Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU08L	UE professionnalisante 3: CenTuri Seminars	Master 2	3	10 hours + 10 hours of practical works	10 hours	Fall	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMCU11L	Optimization and numerical calculus	Master 2	3	6 hours + 6 hours of practical works	6 hours	Fall	Centre for Living Systems (CENTURI)	Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Château-Gombert	SMQCU43G	Scaling, Similarity and Self-Organization	Master 2	4	20 hours	20 hours	Fall	Department of Mechanics UNIMECA	Master Mechanics : Fluids and solids	English B2 level
Château-Gombert	SMQCU42G	Bio-inspired Engineering	Master 2	4	20 hours	20 hours	Fall	Department of Mechanics UNIMECA	Master Mechanics : Fluids and solids	English B2 level
Château-Gombert	SMQCU40G	Trends in Mechanics	Master 2	4	20 hours	20 hours	Fall	Department of Mechanics UNIMECA	Master Mechanics : Fluids and solids	English B2 level
Château-Gombert	SMQCU39G	Machine Learning Systems for Mechanics	Master 2	4	25 hours of practical works	15 hours	Fall	Department of Mechanics UNIMECA	Master Mechanics : Fluids and solids	English B2 level
Château-Gombert	SMQCU38G	Complex and Heterogeneous Materials	Master 2	4	20 hours	20 hours	Fall	Department of Mechanics UNIMECA	Master Mechanics : Fluids and solids	English B2 level
Château-Gombert	SMQCU37G	Fluid-Structure Interactions	Master 2	4	20 hours	20 hours	Fall	Department of Mechanics UNIMECA	Master Mechanics : Fluids and solids	English B2 level
Saint-Charles	SNECU06C	From perception to action	Master 2	6	10 hours + 10 hours of practical works	30 hours	Fall	Department of Biology	Master's degree in NeuroscienceType course: Neurosciences and biotechnologies (NEB)	English B2 level
Saint-Charles	SNECU07C	Computational Neurosciences and neural networks	Master 2	3	10 hours + 10 hours of practical works	10 hours	Fall	Department of Biology	Master's degree in NeuroscienceType course: Neurosciences and biotechnologies (NEB)	English B2 level

Saint-Jérôme	SNNAU02J	Organic Chemistry of Nanomaterials	Master 1	3	9 hours + 3 hours of practical works	15 hours	Fall	Department of Chemistry	Master Nanosciences and nanotechnologies : Chemical Nano- Engineering (CNE)	English B2 level. Max 1 or 2 exchange students/year. Subject to academic background
Saint-Jérôme	SNNAU03J	Basic Quantum Chemistry Modelling	Master 1	3	9 hours + 3 hours of practical works	15 hours	Fall	Department of Chemistry	Master Nanosciences and nanotechnologies : Chemical Nano- Engineering (CNE)	English B2 level. Max 1 or 2 exchange students/year. Subject to academic background
Saint-Jérôme	SNNAU04J	Computational Modelling of Nano-Systems	Master 1	7	21 hours + 18 hours of practical works	24 hours	Fall	Department of Chemistry	Master Nanosciences and nanotechnologies : Chemical Nano- Engineering (CNE)	English B2 level. Max 1 or 2 exchange students/year. Subject to academic background
Saint-Jérôme	SNNAU05J	Nano-electrochemistry	Master 1	3	9 hours + 3 hours of practical works	15 hours	Fall	Department of Chemistry	Master Nanosciences and nanotechnologies : Chemical Nano- Engineering (CNE)	English B2 level. Max 1 or 2 exchange students/year. Subject to academic background
Saint-Jérôme	SNNAU06J	Solid-state chemistry	Master 1	7	21 hours + 6 hours of practical works	36 hours	Fall	Department of Chemistry	Master Nanosciences and nanotechnologies : Chemical Nano- Engineering (CNE)	English B2 level. Max 1 or 2 exchange students/year. Subject to academic background
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Jérôme	SNNAU07J	Thermodynamics of Materials – Interactions and Surface Forces	Master 1	3	9 hours + 3 hours of practical works	15 hours	Fall	Department of Chemistry	Master Nanosciences and nanotechnologies : Chemical Nano- Engineering (CNE)	English B2 level. Max 1 or 2 exchange students/year. Subject to academic background
Saint-Charles	SPHCU07C	Quantum Field Theory	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPH4U04C	Quantum Mechanics	Master 1	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPH4U05C	Mathematics for Physics	Master 1	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPH4U06C	Electromagnetism and optics	Master 1	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHAU01C	Scientific watch	Master 1	2	24 hours		Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHAU02C	Laboratory and numerical methods	Master 1	4	40 hours		Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHAU03C	Statistical Physics	Master 1	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU02C	Plasma-Wall Interaction, Discharge Plasmas	Master 2	6	30 hours	18 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Charles	SPHCU03C	Magnetic Confinement Fusion	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU06C	Atomic and Molecular Physics, Spectroscopy	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF8C	Magnetohydrodynamics in Plasmas	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF9C	Plasma Kinetics, Turbulence and Transport	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUG1C	Strong Heat Flux and Irradiation Effects on Materials	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUG2C	Superconductors for Fusion	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUG5C	Planetary Systems	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU01C	The Relativistic Universe	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU04C	Galaxies and Cosmology	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level

Saint-Charles	SPHCU05C	Stars and Galaxies	Master 2	6	26 hours + 8 hours of practical works	26 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Charles	SPHCU08C	Advanced Particle Physics	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU09C	General Relativity	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU11C	Advanced Quantum Statistical Physics	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU22C	Statistical Physics II	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU28C	Dynamical Systems and Non-Linear Physics	Master 2	6	30 hours	30 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCU29C	Complex Systems and Introduction to Machine Learning	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF1C	Advanced Quantum Field Theory	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF2C	Soft Matter	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF3C	Out of Equilibrium Quantum Statistical Physics	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF4C	Standard Model & Gauge Theory	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF5C	Astroparticles and Primordial Cosmology	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF6C	Experimental Test of Standard Model and Beyond	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHCUF7C	Radiation Matter Interaction, Radiative Transfer	Master 2	4	20 hours	20 hours	Fall	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Charles	SPHCUG3C	Power Sources: HF, Laser	Master 2	4	20 hours	20 hours	Fall	Department of Physics	European Master in Nuclear Fusion and Engineering Physics	English B2 level
Saint-Charles	SPHAU06C	Electromagnetism	Master 1	4	20 hours	20 hours	Fall	Department of Physics	Master de Physique	English B2 level
Saint-Charles	SPHCD8AC	Dynamical Systems and Non-Linear Physics 1	Master 2	4	20 hours	20 hours	Fall	Department of Physics	Master Mechanics : Fluids and solids	English B2 level
Saint-Jérôme	SNNC03J	Hybrid electronics 1 : Organig optoelectronics	Master 2	2	6 hours	12 hours	Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNC25J	Nano-objects	Master 2	36	9 hours	44 hours	Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNCU03J	Quantum Nanoelectronics	Master 2	8	40 hours	45 hours	Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNCU05J	Student seminars	Master 2	2	18 hours		Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNCU09J	Hybrid electronics 1 : Advanced memories	Master 2	2	6 hours	12 hours	Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNCU19J	Nanomagnetism & spintronics	Master 2	6	30 hours	24 hours	Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNCU21J	Hybrid electronics 1 : Sensors	Master 2	2	6 hours	12 hours	Fall	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SPHAU58J	Fundamental in Optics	Master 1	6	40 hours	40 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHAU59J	Light Emission, Laser sources	Master 1	3	10 hours	30 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHAU60J	Imaging and Instrumentation in Optics	Master 1	3	10 hours	20 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHAU61J	Laboratory Practice	Master 1	3	40 hours		Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Jérôme	SPHAU62J	Personal Project	Master 1	6	80 hours		Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track

Saint-Jérôme	SPHAU6J	Physics for Photonics	Master 1	6	20 hours	40 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHAU6J	Français Langue Etrangere	Master 1	3	24 hours		Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHCUH6J	Tutorials	Master 2	2		20 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUH7J	Quantum Optics	Master 2	3		22 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUH8J	Analysis on research or technological intelligence	Master 2	2		20 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUH9J	Laser sources and application / matter interaction	Master 2	3		34 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUK1J	Optical components and optoelectronics	Master 2	3		34 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUK2J	Photonics for biomedical applications	Master 2	3		24 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Jérôme	SPHCUK3J	Advanced method for optical instrumentations	Master 2	3		24 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUK4J	Experimental projects A	Master 2	3			Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track
Saint-Jérôme	SPHCUK5J	Experimental projects B	Master 2	3			Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track
Saint-Jérôme	SPHCUK6J	Advanced Electromagnetism	Master 2	3		24 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUK7J	Numerical method for electromagnetism	Master 2	3	10 hours	22 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUK8J	Instrumentation for astronomy from ground and space	Master 2	3		34 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCUK9J	Nanophotonics	Master 2	3		28 hours	Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Bachelor degree + 1st year Master in Physics or Engineering. Solid academic background in physics & optics
Saint-Jérôme	SPHCU2J	Français langue étrangère (FLE S3)	Master 2	2	24 hours		Fall	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track
Saint-Charles	SPHCUG4C	Particle Transport Modeling	Master 2	4	20 hours	20 hours	Fall	Department of Physics	Master of Physics / Physics Track	English B2 level
Saint-Charles	SPHCUD9C	Laser Created Plasmas	Master 2	4	20 hours	20 hours	Fall	Department of Physics	Physics Track	English B2 level
Saint-Charles	HCOAU01	Introduction to cognitive science	Master 1	3	15 hours	15 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Charles	HCOAU03, SSCAU02C	Introduction to Neurobiology	Master 1	3	3 hours + 9 hours of practical works	18 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOAU04, SSCAU04C	Algebraic Methods	Master 1	3	12 hours + 9 hours of practical works	9 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOAU2, SSCAU01C	Language and cognition	Master 1	6	30 hours + 10 hours of practical works	20 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOCU01	Scientific Workshop	Master 2	3	30 hours		Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOCU03, SSCU01C	Language, Communication and the Brain 2	Master 2	6	30 hours	30 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level

Saint-Charles	HCOCU04	Plateformes	Master 2	3	12 hours + 12 hours of practical works	6 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCODU01	Cognitive Engineering	Master 2	6	40 hours of practical work	20 hours	Fall	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles Luminy	SMIGU08	Mathematics in English 2	Bachelor (L3)	3	18 hours	12 hours	Spring	Department of Mathematics	Bachelor program in Mathematics	English B2 level
Luminy	SBIB04AL	Bioinformatics Analysis of Omics Data	Master 1	3	15 hours + 15 hours of practical work		Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SBIB04BL	Statistical Analysis of Omics Data	Master 1	3	20 hours of practical works	10 hours	Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMB02AL	Graph theory and algorithms 1	Master 1	3	6 hours + 6 hours of practical works	6 hours	Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMB02BL	Statistics for biology	Master 1	3	6 hours + 6 hours of practical works	6 hours	Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMBU01L	Fundamentals of biology 2	Master 1	4	12 hours	12 hours	Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMBU03L	Advanced statistics	Master 1	3	6 hours + 6 hours of practical works	6 hours	Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMBU04L	Probability and statistics for modelling 2	Master 1	3	6 hours + 6 hours of practical works		Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Luminy	SCMBU05L	Research project and scientific communication	Master 1	6	Internship -6 weeks April 15 – June 1		Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMBU06L	Centuri Seminars	Master 1	2		12 hours	Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Luminy	SCMBU08L	Hilbert and Fourier analysis	Master 1	3	6 hours + 6 hours of practical works	6 hours	Spring	Centre for Living Systems (CENTURI)	Master Math et Applications / Master Math appliquees Stat / Computational and mathematical biology (CMB)	English B2 level
Saint-Charles	SNEBU07C	Experimental Approches of Neuropathology	Master 1	6	18 hours	30 hours	Spring	Department of Biology	Master's degree in NeuroscienceType course: Neurosciences and biotechnologies (NEB)	English B2 level
Saint-Charles	SNEBU08C	Methodologies	Master 1	6	60 hours of practical works		Spring	Department of Biology	Master's degree in NeuroscienceType course: Neurosciences and biotechnologies (NEB)	English B2 level
Saint-Charles	SPHBU01C	Laboratory and numerical methods	Master 1	4	40 hours		spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU04C	Statistics and Data Analysis	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU05C	Plamas Physics	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU06C	Charged Fluids Dynamics	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU08C	Cosmology	Master 1	4	17 hours + 6 hours of practical works	17 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU09C	Relativity	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Charles	SPHBU45C	Subatomic and Particle Physics	Master 1	4	18 hours + 4 hours of practical works	18 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU77C	Spectroscopy, Images, Detection	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU78C	Advanced Mathematical Methods	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU79C	Dynamical Systems	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU80C	Continuous Media	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU81C	Condensed Matter Physics	Master 1	4	20 hours	20 hours	Spring	Department of Physics	<ul style="list-style-type: none"> • Master of Physics / Physics track • European Master in Nuclear Fusion and Engineering Physics • International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level

Saint-Charles	SPHDU02C	numerical and computational modeling	Master 2	4	20 hours	20 hours	spring	Department of Physics	<ul style="list-style-type: none"> Master of Physics / Physics track European Master in Nuclear Fusion and Engineering Physics International Double-Degree Master of Physics/ Physics / Laurea di Fisica Genoa Univ 	English B2 level
Saint-Charles	SPHBU82C	Physics of Living Systems I	Master 1	4	20 hours	20 hours	Spring	Department of Physics	European Master in Nuclear Fusion and Engineering Physics	English B2 level
Saint-Charles	SPHBU02C	Research project and scientific communication	Master 1	6			Spring	Centre for Living Systems (CENTURI)	Master Bio-informatics / Computational and mathematical biology (CMB)	English B2 level
Saint-Charles	SPHBUA8C	Stars and exoplanets	Master 1	4	17 hours + 6 hours of practical works	17 hours	Spring	Department of Physics	Master de Physique	English B2 level
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Jérôme	SNNCU15J	Photonics & nanophotonics	Master 2	3	9 hours	18 hours	Spring	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNDU03J	Emerging nanosciences	Master 2	2		18 hours	Spring	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNDU04J	Internship in laboratory or enterprise	Master 2	20			Spring	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNDU06J	integration & reliability	Master 2	3	9 hours	18 hours	Spring	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNDU07J	nanobiosciences	Master 2	3	9 hours	18 hours	Spring	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SNNDU08J	Advanced numerical methods & simulations	Master 2	3	18 hours	9 hours	Spring	Department of Physics	Master Nanosciences & nanotechnologies - Nanoscale and Quantum Engineering (NQE)	English B2 level
Saint-Jérôme	SPHBU92J	Signal and Image Analysis	Master 1	3	10 hours	20 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBU93J	Non Linear Optics	Master 1	2		20 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBU94J	Guided Optics-Applications of optoelectronics components	Master 1	3	10 hours	20 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBU95J	Physics for Photonics part II	Master 1	2	7 hours	13 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBU96J	Prop.-fab.-charac. opto. Devices	Master 1	3	10 hours	20 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBU97J	Advanced Electromagnetics 1 - Numerical Approach	Master 1	3	21 hours	9 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
SITE	Code	Course name	Level	ECTS credits	TD / Tutorial	CM / Lecture	Semester	Department / Institute	Program	Academic requirements
Saint-Jérôme	SPHBU98J	Lab project and Practice work	Master 1	3			Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track
Saint-Jérôme	SPHBUA2J	Photon Spectroscopy	Master 1	2		15 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBUA3J	Introduction to molecular cell biology	Master 1	2		15 hours	Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 level - Max 5 exchange students Bachelor degree in Physics or Engineering Solid academic background in the general fields of physics
Saint-Jérôme	SPHBUA5J	Francais langue étrangere (FLE S2)	Master 1	2	24 hours		Spring	Department of Physics	Master of Physics / Europhotonics track	English B2 Level - Max 5 exchange students Only if combined with all the other ECTS from Europhotonics track
Saint-Charles	HCOAU5, SSCBU03C	Probability and Statistics	Master 1	3	12 hours + 9 hours of practical works	9 hours	Spring	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOBU01	Experimental Method	Master 1	3	20 hours	10 hours	Spring	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOBU02	Language, Communication and the Brain 1	Master 1	6	30 hours	30 hours	Spring	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOBU03, SSCBU01C	Data in cognitive Science	Master 1	3	3 hours + 12 hours of practical works	15 hours	Spring	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOBU04, SSCAU03C	Programming	Master 1	3	10 hours + 10 hours of practical works	10 hours	Spring	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level
Saint-Charles	HCOBU05, SSCBU02C	Machine Learning	Master 1	3	10 hours + 10 hours of practical works	10 hours	Spring	Institute of Language Communication and the Brain : Faculty of Sciences / Faculty of Humanities	Master in Cognitive Science / MASCO	English B2 level