

Plan d'études

Physique 2025-26

Bloc "Projets et SHS"

Cours			Master 1					Master 2					Session Examen	Examen	Crédits	
Lang.	Code	Sect.	Enseignants	C	E	L	T	P	I	C	E	L	T	P	I	
	SHS : Projet															
		SHS													Eté	3
	Projet de Physique I														Hiv	Pendant le 8 semestre
	PHYS-421	PH	Profs divers					8h								
	Projet de Physique II														8h Eté	Pendant le 8 semestre
	PHYS-422	PH	Profs divers													
	SHS : Introduction au projet														Hiv	3
		SHS														

Groupe II

Cours			Master 1					Master 2					Session Examen	Examen	Crédits			
Lang.	Code	Sect.	Enseignants	C	E	L	T	P	I	C	E	L	T	P	I			
	Travail de spécialisation pour master en physique																	
	PHYS-597	PH	Profs divers							680h						680h Eté Hiv	Pendant le semestre	30

Options SPH

Cours				Master 1					Master 2					Session Examen	Examen	Crédits		
Lang.	Code	Sect.	Enseignants	C	E	L	T	P	I	C	E	L	T	P	I			
	Advanced superconducting magnet technologies																	
E	PHYS-476	PH	Riccioli							2h	2h					Eté	Oral	4
	Astrophysics II : interactions radiation-matter																	
E	PHYS-472	PH	Jablonka	2h	2h											Hiv	Ecrit	4
	Astrophysics III : galaxy formation and evolution																	
E	PHYS-465	PH	Hirschmann	2h	2h											Hiv	Oral	4
	Astrophysics IV : stellar and galactic dynamics																	
E	PHYS-401	PH	Revaz							2h	2h					Eté	Oral	4
	Astrophysics V : observational cosmology																	
E	PHYS-402	PH	Kneib							2h	2h					Eté	Oral	4
	Attosecond radiation sources																	
E	PHYS-761	EDPY	Carbone Invited professor(s) Puppin	2h	2h											Hiv	Oral	4
	Biophysics : physics of biological systems																	
E	PHYS-302	PH	Rahi	2h	2h											Hiv	Pendant le semestre	4
	Computational quantum physics																	
E	PHYS-463	PH	Carleo							2h	2h					Eté	Oral	6
	Computer simulation of physical systems I																	
E	PHYS-403	PH	Pasquarello	2h	2h											Hiv	Oral	4
	Electron microscopy: advanced methods																	
E	MSE-450	MX	Alexander							2h	2h					Eté	Oral	4
	Frontiers in nanosciences																	
E	PHYS-407	PH	Pivetta	2h	2h											Hiv	Oral	4

	Fundamentals of biomedical imaging										
E	PHYS-438	PH	Xin			2h	2h	Eté		Ecrit	4
	Interacting quantum matter										
E	PHYS-502	PH		3h	1h			Hiv		Oral	4
	Introduction to astroparticle physics										
E	PHYS-439	PH	Neronov Perrina Savchenko			2h	2h	Eté		Oral	4
	Introduction to particle accelerators										
E	PHYS-448	PH	Pieloni	2h	2h			Hiv		Ecrit	4
	Machine learning for physicists										
E	PHYS-467	PH	Zdeborová	2h	2h	1h			Hiv	Ecrit	6
	Magnetism in materials										
E	PHYS-491	PH	Zivkovic			2h	2h	Eté		Oral	4
	Mathematical aspects of quantum physics										
E	PHYS-469	PH	Bossoney	2h	2h			Hiv		Oral	4
	Microwave engineering in physics										
E	QUANT-410	SIQ	Manucharyan			2h	1h	1h	Eté	Oral	4
	Modeling and design of experiments										
E	PHYS-442	PH	Fuerbringer	2h	1h	1h			Hiv	Oral	4
	Modern approaches to quantum gravity										
E	PHYS-504	PH	Guica	2h	2h			Hiv		Oral	8
	MRI Practicals on CIBM preclinical imaging systems										
E	PHYS-473	PH	Cudalbu Moldovan Lanz Lê	2h		2h			Hiv	Pendant le semestre	4
	Neutron and X-ray Scattering for Quantum Materials										
E	PHYS-640	EDPY	Fogh Rønnow Schmitt	2h	2h			Hiv		Oral	4
	Nonlinear dynamics, chaos and complex systems										
E	PHYS-460	PH	Février			3h	2h	Eté		Oral	6
	Nonlinear optics for quantum technologies										
E	PHYS-470	PH	Galland			2h	2h	Eté		Ecrit	4
	Nuclear fusion and plasma physics										
E	PHYS-445	PH	Fasoli	2h	2h			Hiv		Oral	4
	Nuclear interaction : from reactors to stars										
E	PHYS-461	PH		2h	2h			Hiv		Ecrit	4
	Particle detection										
E	PHYS-440	PH	Haefeli	2h	2h			Hiv		Pendant le semestre	4
	Particle physics: the flavour frontiers										
E	PHYS-471	PH	Marchevski			2h	2h	Eté		Oral	4
	Particle physics I										
E	PHYS-415	PH	Marchevski	2h	2h			Hiv		Oral	4
	Particle physics II										
E	PHYS-416	PH	Shchutska			2h	2h	Eté		Oral	4
	Physics of life										
E	PHYS-468	PH	Stahlberg			2h	2h	Eté		Ecrit	4
	Physics of low-dimensional materials										
E	PHYS-474	PH	Wäckerlin			2h	2h	Eté		Oral	4
	Physics of materials										
E	PHYS-307	PH	La Grange	2h	2h			Hiv		Oral	4
	Physics of photonic semiconductor devices										
E	PHYS-434	PH	Butté			2h	2h	Eté		Ecrit	4

E	Plasma I PHYS-423	PH	Theiler	2h 3h		Hiv	Oral	6
E	Plasma II PHYS-424	PH	Reimerdes		2h 2h	Eté	Oral	6
E	Quantum computing PHYS-541	PH	Savona	3h 2h		Hiv	Oral	6
E	Quantum electrodynamics and quantum optics PHYS-453	PH	Kippenberg	2h 2h		Hiv	Ecrit	6
E	Quantum field theory I PHYS-431	PH	Rattazzi	3h 2h		Hiv	Oral	6
E	Quantum field theory II PHYS-432	PH	Rattazzi		3h 2h	Eté	Oral	6
E	Quantum field theory III PHYS-503	PH	Rattazzi	3h 1h		Hiv	Oral	8
E	Quantum information theory PHYS-550	PH	Holmes	2h 2h		Hiv	Ecrit	4
E	Quantum optics and quantum information PHYS-454	PH	Brantut		2h 2h	Eté	Ecrit	6
E	Quantum physics III PHYS-425	PH	Yazyev	2h 3h		Hiv	Oral	6
E	Quantum physics IV PHYS-426	PH	Carleo Rossi		2h 2h	Eté	Ecrit	6
E	Quantum transport in mesoscopic systems PHYS-462	PH	Banerjee		2h 2h	Eté	Oral	4
E	Radiation biology, protection and applications PHYS-450	PH	Damet Grilj Pakari	2h 1h		Hiv	Ecrit	4
E	Radiation detection PHYS-452	PH	Lamirand	2h 1h		Hiv	Oral	4
E	Relativity and cosmology I PHYS-427	PH	Kunz	3h 2h		Hiv	Ecrit	6
E	Relativity and cosmology II PHYS-428	PH	Gorbenko		2h 2h	Eté	Ecrit	6
E	Selected topics in nuclear and particle physics PHYS-400	PH	Blanc		2h 2h	Eté	Oral	4
E	Semiconductor physics and light-matter interaction PHYS-433	PH	Butté	2h 2h		Hiv	Ecrit	4
E	Solid state physics III PHYS-419	PH	Läuchli Herzig	3h 2h		Hiv	Oral	6
E	Solid state physics IV PHYS-420	PH	Carbone		2h 2h	Eté	Oral	4
E	Solid state systems for quantum information PHYS-464	PH	Scarlino		2h 2h	Eté	Oral	4
E	Spintronics : basics and applications PHYS-510	PH	Pivetta Rusponi		2h 2h	Eté	Oral	4
E	Statistical physics : theory of phase transitions PHYS-475	PH	De Los Rios	2h 2h		Hiv	Ecrit	4
E	Statistical physics III PHYS-435	PH		2h 2h		Hiv	Ecrit	6
E	Statistical physics IV PHYS-436	PH	Kippenberg		2h 2h	Eté	Ecrit	6
E	Statistical physics of biomacromolecules PHYS-441	PH	De Los Rios	2h 2h		Hiv	Oral	4
E	Statistical physics of computation PHYS-512	PH	Erba	2h 2h		Hiv	Ecrit	4
E	The standard model PHYS-505	PH	Riembau Saperas	3h 1h		Hiv	Oral	8

<i>E</i>	Topics in biophysics and physical biology <i>PHYS-466 PH Manley</i>	2h 1h	<i>Eté</i>	<i>Pendant le 3 semestre</i>
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