

2023-2024 MASTER EN GENIE NUCLEAIRE

validé par la Vice-présidence académique le 15 juin 2023

CODE	MATIERES	ENSEIGNANTS sous réserve de modification	SEMESTRES									EDITS ECT			EXAMENS *		
			MA1			MA2			MA3			EPFL	ETHZ	PSI	HIVER	ETE	FORME
			c	e	p	c	e	p	c	e	p						
Groupe 1 "Compulsory core courses"												70					
PHYS-443	Physics of nuclear reactors	Hursin/Pautz	4	2								6			H		oral
PHYS-451	Radiation and reactor experiments	Hursin/Lamirand/Pakari			4							6			sem A		sans retrait
PHYS-450	Radiation biology, protection and applications	Pakari/Damet/Grijl	2	1								4			H		écrit
ETH-401	Fuel cycle and waste management	Eichler/Streit/Churakov				2	1					4					E **
ETH-402	Nuclear Fuels and Materials	Pouchon/Spätig				3						4					E **
ETH-522	Reliability Engineering and quantitative risk analysis	Sansavini/Dang/Podofilini				2	1					4					E **
ETH-403	Technology and safety of nuclear power plants	Manera				4	1					6					E **
MGT-nnn	Course of entrepreneurship	Divers enseignants	----- 4 -----									4			sem A	sem P	
ETH-530	Advanced topics in nuclear reactor materials (block course)	Pouchon/Streit/Spätig									2	1		4	sem A		
ETH-532	Beyond-design-basis safety (block course)	Manera/Lind/Paladino									2	1		4	sem A		
ETH-533	Decommissioning of nuclear power plants (block course)	Pautz									2	1		4	sem A		
ETH-531	Nuclear computations lab	Ferroukhi/Freixa/Pautz									1	3		4	sem A		
ETH-590	Semester Project Nuclear Engineering	Divers enseignants										8		8	sem A		
PHYS-595	Stage d'ingénieur (master en Génie nucléaire)	Divers enseignants										8		8	sem A		
Groupe 2 "Elective core courses"												20					
ME-409	Energy conversion and renewable energy	Maréchal/Nguyen T.-V.	2	1	1							4			H		écrit
PHYS-405	Experimental methods in physics	Dwir/Cantoni	2	1								3			H		oral
ME-453	Hydraulic turbomachines	Vagnoni	3	1								4			H		écrit
MICRO-511	Image processing I	Unser/Van De Ville	3									3			H		écrit
PHYS-455	Introduction to medical radiation physics	Bochud	2	1								4			H		écrit
PHYS-448	Introduction to particle accelerators	Seidel	2	2								4			H		écrit
ME-454	Modeling and optimization of energy systems	Maréchal	2	2								4			H		oral
PHYS-640	Neutron and X-ray Scattering of Quantum Materials	Fogh/Schmitt	2	2								4			H		oral
PHYS-445	Nuclear fusion and plasma physics	Fasoli	2	2								4			H		oral
PHYS-461	Nuclear interaction : from reactors to stars	Rochman	2	2								4			H		écrit
MATH-468	Numerics for fluids, structures and electromag. (pas donne en 2023-2024)	vacat.	2	2								5			H		oral
PHYS-423	Plasma I	Theiler	2	3								6			H		oral
PHYS-452	Radiation detection	Lamirand	2	1								3			H		oral
ETH-441	Advanced Techniques for the Risk Analysis of Technical Systems	Sansavini				2	1					4					E **
ETH-427	Biomedical Imaging	Kozerke/Prüssmann				5						6					E **
ETH-433	Computational Multiphase Thermal Fluid Dynamics	Prasser/Dehbi/Niceno				2	1					4					E **
ETH-444	Computational Neuroimaging Clinic	Stephan				2						3					E **
ETH-454	Electrochemical Energy Conversion and Storage Technologies	Gubler/Fabbri/Herranz Salazar				3						4					E **
ETH-445	Introduction to Quantum Mechanics for Engineers	Norris				2	2					4					E **
ETH-446	Magnetic Resonance Imaging in Medicine	Kozerke/Weiger				3						4					E **
ETH-442	Materials Analysis by Nuclear Techniques	Doebeli				2	1					6					E **
ETH-452	Medical Physics II	Manser				2	1					6					E **
ETH-453	Micro and Nano-Tomography of Biological Tissues	Stampanoni/Kaestner				3						4					E **
ETH-447	Monte Carlo in Medical Physics	Stampanoni/Fix				3						4					E **
ETH-434	Multiphase Flow	Prasser				3						4					E **
ETH-443	Physics Against Cancer: The Physics of Imaging and Treating Cancer	Lomax/Schneider				2	1					6					E **
ETH-404	Physics of Nuclear Reactor II	Pelloni/Mikityuk/Pautz				3						4					E **
ETH-448	Radiation Imaging for Industrial Applications	Prasser/Adams				2	1					4					E **
ETH-449	Therapeutic Applications of Particle Physics: Principles and Practice	Lomax				2	1					6					E **
PHYS-490	Elective project nuclear engineering	Divers enseignants	← 8 →									8			sem A		
"Free" elective courses																	
---	Master courses from the catalogue of courses EPFL or ETHZ (pré)	Divers enseignants											max. 8 credits		H	E	**
Total des crédits du cycle master												90					

Remarques :

* Se référer à l'art. 3 al. 4 du règlement d'application

** Selon plan d'études de l'ETHZ : <https://ethz.ch/en/studies/master/degree-programmes/engineering-sciences/nuclear-engineering.html>

*** sans retrait = no withdrawal = not possible to withdraw from this course after the registration deadline

Code ETH-4nn = enseignement donné à l'ETH

Code ETH-5nn = enseignement donné au PSI