

Studies Plan

Science et génie des matériaux 2023-24

Block "Projects & SHS"

Courses			Master 1	Master 2	Exam Session	Exam	Credit		
Language	Code	Section	Teacher	Specialization	p	l	e	p	
E		Innovation & entrepreneurship in engineering MGT-555	MTE Michaud Weber	2h	8h		Win	During the semester	10
E		Research project in materials I MSE-490	MX Profs divers		10h	10h	Sum Win	During the semester	10
E		Research project in materials II MSE-491	MX Profs divers		10h	10h	Sum Win	During the semester	10
		HSS : Introduction to project SHS					Win		3
		HSS : Project SHS					Sum		3

Block 1

Courses			Master 1	Master 2	Exam Session	Exam	Credit			
Language	Code	Section	Teacher	Specialization	p	l	e	p		
E		Advanced metallurgy MSE-422	MX Leinenbach	3h	1h		Win	Written	4	
E		Fracture of materials MSE-424	MX Plummer		2h	2h	Sum	Written	4	
E		Fundamentals of solid-state materials MSE-423	MX Marzari	3h	1h		Win	Written	4	
E		Soft matter MSE-425	MX Amstad Klok	3h	1h		Win	Written	4	
E		Statistical mechanics MSE-421	MX Ceriotti		2h	1h	1h	Sum	Oral	4

Group "options"

Courses			Master 1	Master 2	Exam Session	Exam	Credit		
Language	Code	Section	Teacher	Specialization	p	l	e	p	
E		Advanced phase transformations MSE-483	MX Raju Natarajan	2h	1h		Win	Written	3
E		Assembly techniques MSE-464	MX Leinenbach Plummer		2h		Sum	During the semester	2
E		Atomistic and quantum simulations of materials MSE-468	MX Marzari		3h	1h	Sum	During the semester	4
E		Biomaterials (pour MX) MSE-471	MX	2h	2h		Win	Written	4
E		Cementitious materials (advanced) MSE-420	MX Scrivener	2h			Win	During the semester	2
E		Composites technology MSE-440	MX Bourban Michaud Wakeman	2h	1h		Win	During the semester	3
E		Electrochemistry for materials technology MSE-441	MX Frantz Van Herle	2h			Win	During the semester	2
E		Electron microscopy: advanced methods MSE-450	MX Alexander		2h	1h	Sum	During the semester	3

E	Error control in scientific modelling MATH-500	MA	Herbst	2h	2h		Win	During the 5 semester	5	
E	Immunoengineering BIOENG-399	SV	Tang	2h	2h		Win	Written	4	
E	Introduction to crystal growth by epitaxy MSE-442	MX			2h		Sum	During the 2 semester	2	
E	Introduction to magnetic materials in modern technologies MSE-432	MX	Grundler		2h	2h	Sum	During the 4 semester	4	
E	Life cycle engineering of polymers MSE-430	MX	Leterrier		2h		Win	During the 2 semester	2	
E	Light, liquids and interfaces MICRO-390	MT	Roke	2h	2h		Win	Written	4	
E	Material science at large scale facilities MSE-435	MX			3h	1h	Sum	Oral	4	
E	Materials selection MSE-474	MX	Michler Siegmann Vaucher		2h		Sum	Written	2	
E	Mathematical methods for materials science MSE-487	MX	Sorin	2h	2h		Win	Written	4	
E	Nanomaterials MSE-477	MX	Tileli	2h	1h		Win	During the 3 semester	3	
E	Optical properties of materials MSE-482	MX	Marchioro Nüesch		2h	1h	Sum	Written	3	
E	Organic electronic materials MSE-486	MX	Frauenrath		3h	1h	Sum	Written	4	
E	Physical chemistry of polymeric materials MSE-431	MX	Klok-Lermann		2h	1h	Sum	During the 3 semester	3	
E	Polymer chemistry and macromolecular engineering MSE-437	MX	Klok		2h	1h	Sum	During the 3 semester	3	
E	Properties of semiconductors and related nanostructures MSE-484	MX	Piazza		3h	2h	Sum	During the 5 semester	5	
E	Recycling of materials MSE-463	MX	Leterrier		2h		Sum	During the 2 semester	2	
E	Research project in materials III MSE-492	MX	Profs divers			10h	10h	Sum Win	During the 10 semester	10
E	Seminar series on advances in materials (autumn) MSE-470(a)	MX	Abitbol Raju Natarajan	1h	1h		Win	Written	2	
E	Seminar series on advances in materials (spring) MSE-470(b)	MX	Abitbol Jotzu		1h	1h	Sum	Written	2	
E	Surface analysis MSE-351	MX	Igual Muñoz Stolichnov	2h	1h		Win	Written	3	
E	Thin film fabrication technologies MSE-465	MX	Michler		2h		Sum	Oral	2	
E	Tribology MSE-485	MX	Igual Muñoz Mischler		2h		Win	During the 2 semester	2	
E	Wood structures, properties and uses MSE-466	MX	Pichelin		2h		Sum	Written	2	

Master project

Courses	Master 1	Master 2	MP Autumn	MP Spring	Exam	Exam	Credit
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Language Code	Section	Teacher	Specialization	320h	320h	320h	320h	Session	
Engineering internship credited with master project (master in Materials science and engineering)									
F	MSE-597	MX	Profs divers	320h	320h	320h	320h	Sum Win	Term paper 0
Master project in Materials Science and Engineering									
E	MSE-599	MX	Profs divers			900h	900h	Sum Win	Oral 30