

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	on p	I 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	on p	I	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	Cerioti			2h	1h	1h	Sum	Oral	4

Group "options"

Courses			Master 1		Master 2		Exam Session	Exam	Credit		
Language	Code	Section	Teacher	Specialization	on p	I	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	Oral	3

E	Error control in scientific modelling MATH-500	MA	Herbst	2h	2h		Win	During the 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 semester	2
E	Introduction to magnetic materials in modern technologies MSE-432	MX	Grundler		2h	2h	Sum	During the semester	4
E	Life cycle engineering of polymers MSE-430	MX	Leterrier	2h			Win	During the 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 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 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 semester	3
E	Polymer chemistry and macromolecular engineering MSE-437	MX	Klok		2h	1h	Sum	During the semester	3
E	Properties of semiconductors and related nanostructures MSE-484	MX	Piazza		3h	2h	Sum	During the semester	5
E	Recycling of materials MSE-463	MX	Leterrier		2h		Sum	During the semester	2
E	Research project in materials III MSE-492	MX	Profs divers		10h	10h	Sum Win	During the 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 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 Session	Exam	Credit
Language	Code	Section	Teacher	Specialization	on p	l e p	l e p	l e p		
F	Engineering internship credited with master project (master in Materials science and engineering)									
	MSE-597	MX	Profs divers		320h	320h	320h	320h	Sum Win	Term paper 0
E	Master project in Materials Science and Engineering									
	MSE-599	MX	Profs divers				900h	900h	Sum Win	Oral 30