



SVEUČILIŠTE U ZAGREBU
METALURŠKI FAKULTET

UNIVERSITY OF ZAGREB
FACULTY OF METALLURGY

GRADUATE STUDY PROGRAM “METALLURGY”



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I. YEAR

I. semester

Course	Hours per week			ECTS
	L	S	V	
Physical metallurgy 2	3	0	2	6
Theory of metal forming	3	0	2	6
Theory of metallurgical processes 2	2	0	1	5
Engineering mathematics	2	0	1	5
Physical chemistry of metallurgical processes	2	0	1	4
Thermodynamics of materials	2	0	1	4

II. semester

Course	Hours per week			ECTS
	L	S	V	
Theory of metal casting	2	0	1	6
Industrial furnaces	3	0	2	6
Metallurgy of non-ferrous metals 2	2	0	1	5
Energy management	2	1	0	5
Numerical modelling of metallurgical processes	2	0	1	4
Techniques of joining and cutting	2	0	1	4

II. YEAR

III. semester

Course	Hours per week			ECTS
	L	S	V	
Ferrous and non-ferrous metal casting	3	0	2	5
Heat treatment and special steels	3	1	1	5
Metal corrosion and protection	2	1	1	5
Hydrometallurgy	2	0	1	4
Measurements in metallurgy	2	0	1	4
Optimisation of castings forming	2	0	1	4
Environment protection	2	1	0	3

IV. semester

Modulus: PROCESS METALLURGY AND FOUNDING

Course	Hours per week			ECTS
	L	S	V	
Secondary metallurgy and continuous casting	2	0	1	6
Solidification simulation	2	0	1	6
Metallurgy of aluminium	2	0	1	6
Master thesis	0	5	0	7
ELECTIVE COURSES – choose one				
Contemporary metal casting technologies	2	0	1	5
Analysis of casting defects	2	0	1	5
Electrometallurgy	2	0	1	5

Modulus: MECHANICAL METALLURGY

Course	Hours per week			ECTS
	L	S	V	
Roll forming of metals	2	0	1	6
Non-ferrous metal processing	2	0	1	6
Heating technology of industrial furnaces	2	0	1	6
Master thesis	0	5	0	7
ELECTIVE COURSES – choose one				
Metal tube and profile forming	2	0	1	5
Metal forming machines	2	0	1	5
Renewable energy sources	2	0	1	5
Materials selection and application	2	0	1	5

Modulus: ENGINEERING METALLIC MATERIALS

Course	Hours per week			ECTS
	L	S	V	
Powder metallurgy and sinter materials	2	0	1	6
Materials characterization	2	0	1	6
Surface treatment	2	0	1	6
Master thesis	0	5	0	7
ELECTIVE COURSES – choose one				
Materials selection and application	2	0	1	5
Nanostructured materials	2	0	1	5
Advanced metallic materials	2	0	1	5