MINISTÉRIO DA EDUCAÇÃO
UNIVERSIDADE FEDERAL DE OURO PRETO
PRÓ-REITORIA DE GRADUAÇÃO

UFOP

COURSE OF METALLURGICAL ENGINEERING - 2026/2(curriculum 4)

OURO PRETO'S CAMPUS

CODE	MANDATORY DISCIPLINES	PREREQUISITE	SWL/EWL	CWL	CLASSES		SEM
					T	P	
MET003	EXTENSION PROJECTS		60/60	72	1	3	1
MET270	INTRODUCTION TO METALLURGICAL ENGINEERING		30/0	36	2	0	1
MTM122	DIFFERENTIAL AND INTEGRAL CALCULUS I		90/0	108	6	0	1
MTM730	ANALYTICAL GEOMETRY AND LINEAR ALGEBRA		60/0	72	4	0	1
QUI021	GENERAL CHEMISTRY A		60/0	72	4	0	1
QUI022	EXPERIMENTAL GENERAL CHEMISTRY AB		30/0	36	0	2	1
AMB139	INTRODUCTION TO ENVIRONMENTAL SCIENCES		30/0	36	2	0	2
ARQ209	TECHNICAL DRAWING		30/0	36	1	1	2
BCC104	ALGORITHMS AND PROGRAMMING I		60/0	72	2	2	2
FIS106	FUNDAMENTALS OF MECHANICS	MTM122	60/0	72	4	0	2
GEO176	MINERALOGY		45/0	54	1	2	2
MET004	GENERAL METALLURGY I		30/0	36	2	0	2
MTM123	DIFFERENTIAL AND INTEGRAL CALCULUS II	MTM122	60/0	72	4	0	2
FIS107	FUNDAMENTALS OF THERMODYNAMICS	MTM122	30/0	36	2	0	3
FIS108	FUNDAMENTALS OF FLUIDS, OSCILLATIONS AND WAVES	MTM122	30/0	36	2	0	3
GEO203	MACROSCOPIC PETROGRAGHY	GEO176	45/0	54	1	2	3
MET005	METALURGIA GERAL II	MET270	30/0	36	2	0	3
MTM124	DIFFERENTIAL AND INTEGRAL CALCULUS III	MTM122	60/0	72	4	0	3
MTM125	INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS	MTM122	60/0	72	4	0	3
QUI115	PHYSICAL CHEMISTRY I	MTM122 QUI021	60/0	72	2	2	3
BCC105	NUMERICAL CALCULUS	MTM123	60/0	72	2	2	4
EST202	STATISTICS AND PROBABILITY	MTM123	60/0	72	4	0	4
FIS105	FUNDAMENTALS OF EXPERIMENTAL PHYSICS	FIS106	30/0	36	0	2	4
FIS109	FUNDAMENTALS OF ELECTROMAGNETISM	MTM124	60/0	72	4	0	4
MEC119	FLUID MECHANICS	FIS106 MTM123	60/0	72	2	2	4
MET006	METALLURGICAL PHYSICAL CHEMISTRY I	QUI115	60/0	72	2	2	4
CAT177	GENERAL ELECTROTECHNIC	FIS109 MTM125	60/0	72	2	2	5
FIS110	FUNDAMENTALS OF OPTICS AND QUANTUM MECHANICS	MTM124 MTM125	30/0	36	2	0	5
FIS214	RATIONAL MECHANICS	FIS106 MTM124 MTM125	60/0	72	2	2	5
MEC126	HEAT AND MASS TRANSFER	FIS107 MTM124 MTM125	60/0	72	3	1	5
MET007	METALLURGICAL PHYSICAL-CHEMISTRY II	MET006 QUI115	60/0	72	3	1	5
QUI137	ANALYTICAL CHEMISTRY	QUI115	45/0	54	1	2	5
MEC138	THERMODYNAMICS	FIS107 MEC119	60/0	72	3	1	6
MET008	METALLURGICAL PHYSICAL-CHEMISTRY AND IONIC SYSTEMS	MET006 QUI115	60/0	72	2	2	6
MET032	THE STRUCTURE OF MATERIALS	MTM125	60/0	72	4	0	6
MET047	STRENGTH OF MATERIALS APPLIED TO METALLURGY	FIS106 FIS214	60/0	72	4	0	6
MET155	STRUCTURAL ANALYSIS TECHNIQUES	FIS110 MET005	30/0	36	1	1	6
MIN256	MINERAL PROCESSING I	EST202 GEO203	60/0	72	2	2	6
PRO242	ECONOMICS II	EST202 MTM125	30/0	36	2	0	6
MET009	IRONMAKING	MET006 MET007	60/0	72	3	1	7
MET013	HYDRO AND ELECTROMETALLURGY	MET006 MET007 MET008	60/0	72	3	1	7
MET014	TRANSPORT PHENOMENA IN METALLURGY	MEC119 MEC126	60/0	72	2	2	7
MET015	MECHANICAL METALLURGY	MET032 MET047	30/0	36	2	0	7
MET016	FAILURE PREVENTION AND ANALYSIS	MET032 MET155	30/0	36	2	0	7
MIN257	MINERAL PROCESSING II	EST202 FIS109 MET007	60/0	72	2	2	7
MET017	STEELMAKING	MET009	60/0	72	4	0	8
MET018	NONFERROUS PYROMETALLURGY		60/0	72	3	1	8
MET033	METAL FORMING PROCESSES	MET155	60/0	72	3	1	8
MET034	MECHANICAL TESTS OF MATERIALS	MET032 MET047 MET155	30/0	36	2	0	8
MET269	HEAT TREATMENT OF METALS	MET032 MET155	60/0	72	2	2	8

SWL – SEMESTER WORKLOAD IN HOURS; EWL – EXTENSION WORKLOAD IN HOURS; CWL - 50 MINUTE CLASS WORKLOAD; P - PRACTICAL CLASSES; T - THEORY CLASSES; SEM - SEMESTER

CODE	MANDATORY DISCIPLINES	PREREQUISITE	SWL/EWL	CWL	CLASSES		SEM
					T	P	
MIN021	MINERAL ECONOMY	MIN256 PRO242	30/15	36	1	1	8
MIN258	MINERAL PROCESSING III	MET007 MIN256	60/0	72	2	2	8
MET019	FINAL YEAR PROJECT I	MET155	30/0	36	1	1	9
MET027	METALLURGY OF FERROALLOYS	MET006 MET009 MET014	30/0	36	1	1	9
MET035	WELDING TECHNOLOGY AND METALLURGY	MET015 MET269	60/0	72	3	1	9
MET036	NON-DESTRUCTIVE TESTING	MET015 MET155	30/0	36	1	1	9
MET037	METALLURGICAL PROJECT	MET006 MET009 MET014	30/0	36	1	1	9
MET038	SOLIDIFICATION AND METALS CASTING	MET155	60/0	72	3	1	9
MET039	METAL FORMING		60/0	72	4	0	9
PRO244	ORGANIZATION AND ADMINISTRATION II	2600 hours	30/0	36	2	0	9
DIR250	INTRODUCTION TO LAW AND LEGISLATIONS	2200 hours	30/0	36	2	0	10
MET028	UNDERGRADUATE DISSERTATION II	MET019	60/0	72	0	4	10
MET029	SUPERVISED INTERNSHIP I	1600 hours	30/0	36	0	2	10
MET043	MATERIALS SELECTION	MET269	30/0	36	2	0	10
MET044	TOTAL QUALITY MANAGEMENT IN METALLURGY	2600 hours	30/0	36	2	0	10

CODE	ELECTIVE DISCIPLINES	PREREQUISITE	SWL/EWL	CWL	CLASSES		SEM
					T	P	
BCC106	ALGORITHMS AND PROGRAMMING II	BCC104	60/0	72	2	2	
CAT178	INTRODUCTION TO INDUSTRY 4.0 TECHNOLOGIES	1500 hours	60/0	72	2	2	
CAT700	AUTOMATION OF PRODUCTION SYSTEMS	2700 hours	60/0	72	4	0	
FIS215	CONTINUUM MECHANICS	FIS110	60/0	72	4	0	
FIS525	CERAMIC STRUCTURE AND PROPERTIES	MET032	60/0	72	4	0	
FIS621	CERAMICS PROCESSING	MET032 MET033	60/0	72	3	1	
FIS822	SOLID STATE PHYSICS	FIS110	60/0	72	4	0	
MEC104	MACHINES ELEMENTS I	1600 hours	60/0	72	4	0	
MEC106	MACHINES ELEMENTS II	1600 hours	60/0	72	2	2	
MEC148	FUNDAMENTALS OF METAL CUTTING	MET032	60/0	72	3	1	
MET300	REFRACTORY MATERIALS	GEO176 MET007	30/0	36	1	1	
MET305	SPECIAL TOPICS IN HYDROMETALLURGY LAB	1900 hours	45/0	54	0	3	
MET306	SPECIAL TOPICS IN ENVIRONMENTAL CONCEPTS		30/0	36	2	0	
MET308	CONTINUOUS CASTING OF STEEL	MEC119 MEC126 MET005	30/0	36	2	0	
MET312	TRANSFORMATIONS IN METALS AND METAL ALLOYS	1900 hours	45/0	54	2	1	
MET314	THEORY OF PLASTICITY	2200 hours MET015	45/0	54	2	1	
MET315	PROJECT MANAGEMENT IN METALLURGY	2500 hours	30/0	36	2	0	
MET316	METALLURGY AND ENVIRONMENT	AMB139 MET005	30/0	36	2	0	
MET317	SOLID WASTE AND EFFLUENTS IN METALLURGY	AMB139 MET005	30/0	36	2	0	
MET318	METALS HEAT ANALYSIS TECHNIQUES	2200 hours	30/0	36	2	0	
MET319	SURFACE AND INTERFACES	MET007 MET032	30/0	36	1	1	
MET320	CORROSION AND PROTECTION OF METAL	MET006	30/0	36	2	0	
MET321	FOUNDRY PRACTICES	900 hours	30/0	36	0	2	
MET322	POWDER METALLURGY	2200 hours	30/0	36	1	1	
MET323	TRIBOLOGY	2200 hours	30/0	36	1	1	
MET324	METAL FORMING PRACTISES	MET033 MET269	30/0	36	0	2	
MET325	HOT ROLLING FUNDAMENTALS	MET033 MET269	30/0	36	2	0	
MET326	INTRODUCTION TO THE FINITE ELEMENT METHOD APPLIED TO MECHANICAL FORMING PROCESSES	MET033	30/0	36	1	1	
MET327	FUNDAMENTALS OF SEVERE PLASTIC DEFORMATION	MET033 MET269	30/0	36	2	0	
MET328	COMPUTATIONAL FLUID DYNAMICS APPLIED TO METALLURGY	MEC119 MEC126 MET005	30/0	36	1	1	
MET329	INTRODUCTION TO FINITE ELEMENT ANALYSIS	BCC104 MEC126 MTM125	30/0	36	1	1	
MET330	SUPERVISED INTERNSHIP II	MET029	30/0	36	0	2	

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					T	P	
MET336	PRINCIPLES OF FRACTURE MECHANICS	MET032	30/0	36	2	0	
MET337	FATIGUE OF METALLIC MATERIALS	MET015 MET155	30/0	36	2	0	
MET338	SPECIALS TOPICS – SPECIALS STEELS I	MET032	30/0	36	2	0	
MET339	GEOMETALLURGY	MET005 MET007	30/0	36	1	1	
MET340	PELLETIZING OF IRON ORE	MET005 MET007	30/0	36	2	0	
MET341	INNOVATION IN THE USE OF BIOMASS IN THE PRODUCTION OF PRIMARY IRON AND STEEL	MET009 MET017	45/0	54	3	0	
MET342	ANALYTICAL KNOWLEDGE		30/0	36	2	0	
MET344	CERAMICS MATERIALS	MET032	30/0	36	2	0	
MET345	SCIENTIFIC RESEARCH METHODOLOGY		30/0	36	2	0	
PRO302	ENTREPRENEURIAL ACTIVITIES	2000 hours	60/0	72	1	3	
PRO314	HUMAN RESOURCES MANAGEMENT	PRO244	60/0	72	4	0	

CODE	ACTIVITIES	PREREQUISITE	CHARACTER	SWL	SEM
ATV010		1600	MANDATORY	160	
ATV017			MANDATORY	30	
ATV100			MANDATORY	60	
ATV300			MANDATORY	315	

Required Courses Load		Work Load
Mandatory Disciplines		3135
Elective Disciplines		150
Optative Disciplines		0
Facultative Disciplines		0
Activities		565
Extensions		315
	Total	3850

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