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

UFOP

COURSE OF PHYSICS - 2026/2(curriculum 3)

OURO PRETO'S CAMPUS

CODE	MANDATORY DISCIPLINES	PREREQUISITE	SWL/EWL	CWL	CLASSES		SEM
					T	P	
FIS118	CONCEPTUAL PHYSICS		60/0	72	2	2	1
FIS123	INTRODUCTION TO PHYSICS METHODS		60/0	72	4	0	1
MTM122	DIFFERENTIAL AND INTEGRAL CALCULUS I		90/0	108	6	0	1
MTM131	ANALYTICAL GEOMETRY AND VECTOR CALCULUS		60/0	72	4	0	1
QUI242	GENERAL CHEMISTRY		60/0	72	4	0	1
QUI243	EXPERIMENTAL GENERAL CHEMISTRY		30/0	36	0	2	1
FIS106	FUNDAMENTALS OF MECHANICS		60/0	72	4	0	2
FIS336	EXPERIMENTAL PHYSICS I		60/0	72	0	4	2
FIS400	HISTORY OF PHYSICS		60/0	72	2	2	2
MTM112	INTRODUCTION TO LINEAR ALGEBRA	MTM131	60/0	72	4	0	2
MTM123	DIFFERENTIAL AND INTEGRAL CALCULUS II	MTM122	60/0	72	4	0	2
BCC701	COMPUTER PROGRAMMING I		60/0	72	2	2	3
FIS107	FUNDAMENTALS OF THERMODYNAMICS		30/0	36	2	0	3
FIS108	FUNDAMENTALS OF FLUIDS, OSCILLATIONS AND WAVES	FIS106	30/0	36	2	0	3
FIS337	EXPERIMENTAL PHYSICS II	FIS106 FIS336	30/0	36	0	2	3
FIS600	PHYSICS AND SCIENCE, SOCIETY AND THE ENVIRONMENT		30/0	36	2	0	3
MTM124	DIFFERENTIAL AND INTEGRAL CALCULUS III	MTM123	60/0	72	4	0	3
MTM125	INTRODUCTION TO ORDINARY DIFFERENTIAL EQUATIONS	MTM112 MTM122	60/0	72	4	0	3
FIS109	FUNDAMENTALS OF ELECTROMAGNETISM	FIS106 MTM124 MTM131	60/0	72	4	0	4
FIS124	CLASSICAL MECHANICS	FIS106 MTM123	60/0	72	4	0	4
FIS331	COMPUTATIONAL PHYSICS		60/0	72	4	0	4
FIS338	EXPERIMENTAL PHYSICS III	FIS337	30/0	36	0	2	4
FIS341	METHODS OF THEORETICAL PHYSICS I	MTM124 MTM125	60/0	72	4	0	4
FIS110	FUNDAMENTALS OF OPTICS AND QUANTUM MECHANICS	FIS109	30/0	36	2	0	5
FIS339	EXPERIMENTAL PHYSICS IV	FIS109 FIS338	30/0	36	0	2	5
FIS515	THEORY OF ELECTROMAGNETISM I	FIS109 FIS341	60/0	72	4	0	5
FIS125	FUNDAMENTALS OF RELATIVITY THEORY	FIS109	30/0	36	2	0	6
FIS302	STRUCTURE OF MATTER I	FIS110 MTM125	60/0	72	4	0	6
FIS304	THERMODYNAMICS I	FIS107 FIS108 MTM123	60/0	72	4	0	6
FIS628	THEORY OF ELECTROMAGNETISM II	FIS515	60/0	72	4	0	6
FIS126	RESEARCH METHODOLOGY	1200 hours	60/0	72	4	0	7
FIS413	ADVANCED EXPERIMENTAL PHISICS I	FIS302 FIS339	60/0	72	0	4	7
FIS516	QUANTUM MECHANICS I	FIS302 FIS341	60/0	72	4	0	7
FIS724	INTRODUCTION TO STATISTICAL PHYSICS	FIS302 FIS304	60/0	72	4	0	7
FIS127	GRADUATION PROJECT	FIS126	30/0	36	2	0	8
FIS427	ADVANCED EXPERIMENTAL PHISICS II	FIS413	60/0	72	0	4	8
FIS629	QUANTUM MECHANICS II	FIS516	60/0	72	4	0	8
FIS822	SOLID STATE PHYSICS	FIS516	60/0	72	4	0	8
QUI244	ORGANIC CHEMISTRY	QUI242	30/0	36	2	0	3
QUI245	EXPERIMENTAL ORGANIC CHEMISTRY	QUI242	30/0	18	0	2	3
FIS340	MATERIAL PHYSICS	FIS110	60/0	72	4	0	6
FIS517	METHODS OF THEORETICAL PHYSICS II	FIS341	60/0	72	4	0	5
FIS128	ADVANCED CLASSICAL MECHANICS	FIS124	60/0	72	4	0	6

CODE	ELECTIVE DISCIPLINES	PREREQUISITE	SWL/EWL	CWL	CLASSES		SEM
					T	P	
BCC702	COMPUTER PROGRAMMING II	BCC701	60/0	72	2	2	
BCC760	NUMERICAL CALCULUS	BCC701	60/0	72	2	2	
EST202	STATISTICS AND PROBABILITY	MTM122	60/0	72	4	0	

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					T	P	
FIS140	STATICS	FIS106	30/0	36	2	0	
FIS141	INTRODUCTION TO NUCLEAR PHYSICS	FIS110	60/0	72	4	0	
FIS142	INTRODUCTION TO THE PHILOSOPHY AND HISTORY OF MODERN PHYSICS	FIS400	60/0	72	4	0	
FIS153	GENERAL RELATIVITY	FIS124 FIS125	60/0	72	4	0	
FIS157	INTRODUCTION TO QUANTUM FIELD THEORY	FIS515 FIS516	60/0	72	4	0	
FIS401	INFORMATION AND COMMUNICATION TECHNOLOGIES IN EDUCATION		90/0	108	4	2	
FIS403	EXPERIMENTATION AND INQUIRY-BASED IN PHYSICS EDUCATION	FIS106	90/0	108	2	4	
FIS404	NON-FORMAL AND INFORMAL EDUCATION IN THE NATURAL SCIENCES		90/0	90	4	2	
FIS411	SCIENTIFIC CULTURE AND PUBLIC COMMUNICATION OF SCIENCE		60/0	72	2	2	
FIS412	INTERFACES BETWEEN SCIENCE AND CULTURE		60/0	72	2	2	
FIS415	CURRICULUM, HISTORY, AND STS IN PHYSICS TEACHING	FIS106	90/0	108	4	2	
FIS830	INTRODUCTION TO QUANTUM INFORMATION.	FIS106	60/0	72	4	0	
GEO104	MINERALOGY		60/0	72	2	2	
GEO110	GENERAL GEOLOGY		45/0	54	3	0	
GEO161	GEOPHYSICS		120/0	144	4	4	
LET966	INTRODUCTION TO THE BRAZILIAN SIGN LANGUAGE		60/0	72	2	2	
MTM118	LINEAR ALGEBRA II	MTM112	60/0	72	4	0	
MTM129	ELEMENTS OF PARTIAL DIFFERENTIAL EQUATIONS	MTM125	60/0	72	4	0	
MTM136	INTRODUCTION TO DIFFERENTIAL GEOMETRY	MTM112 MTM124 MTM125	60/0	72	4	0	
MTM236	INTRODUCTION TO DYNAMICAL SYSTEMS	MTM123 MTM125	90/0	108	6	0	
MTM286	ANALYSIS I	MTM124	90/0	108	6	0	
MTM287	ANALYSIS II	MTM286	90/0	108	6	0	
MTM288	ANALYSIS III	MTM287	90/0	108	6	0	
MUL450	GENERAL ASTRONOMY		60/0	72	4	0	
MUL451	FUNDAMENTALS TO ASTRONOMY TEACHING		30/0	36	2	0	
MUL452	TOPICS IN ASTRONOMY		15/0	18	1	0	
PRO301	ENTREPRENEURSHIP		60/0	72	4	0	
QUI137	ANALYTICAL CHEMISTRY	QUI242 QUI243	45/0	54	1	2	
FIS129	ELECTRONIC STRUCTURE OF ATOMS, MOLECULES AND SOLIDS	FIS302 FIS331	60/0	72	3	1	
FIS136	MICROSCOPY TECHNIQUES	FIS110	30/0	36	2	0	
FIS137	MOLECULAR SPECTROSCOPY		30/0	36	1	1	
FIS525	CERAMIC STRUCTURE AND PROPERTIES	FIS110	60/0	72	4	0	
FIS526	MATERIALS CHARACTERIZATION TECHNIQUES		60/0	72	2	2	
FIS621	CERAMICS PROCESSING	FIS525	60/0	72	3	1	
FIS825	QUANTUM STRUCTURE OF MATTER II	FIS516	60/0	72	4	0	
FIS829	INTRODUCTION TO SEMICONDUCTOR PHYSICS	FIS302	60/0	72	4	0	
MET138	METALS HEAT TREATMENT	FIS340	75/0	90	2	3	
MET158	MECHANICAL METALLURGY	MET268	60/0	72	4	0	
MET159	MECHANICAL TESTING OF MATERIALS	MET268	30/0	36	1	1	
MET160	SOLIDIFICATION AND FOUNDRY METALLURGY	FIS304 FIS340	60/0	72	3	1	
MET268	GENERAL METALLURGY	FIS340	60/0	72	4	0	
QUI160	POLYMERIC MATERIALS	QUI244	60/0	72	4	0	
QUI178	RECYCLING OF POLYMERIC MATERIALS	QUI160	30/0	36	2	0	
QUI179	PAINTS AND VARNISHES	QUI160	30/0	36	2	0	
FIS138	METHODS OF THEORETICAL PHYSICS III	FIS341	60/0	72	4	0	
FIS139	INTRODUCTION TO ASTROPHYSICS	FIS110	60/0	72	4	0	
FIS215	CONTINUUM MECHANICS	FIS124	60/0	72	4	0	
FIS725	ELECTRODYNAMICS	FIS628	60/0	72	4	0	
FIS825	QUANTUM STRUCTURE OF MATTER II	FIS516	60/0	72	4	0	
FIS831	THEORY OF RELATIVITY	FIS515	60/0	72	4	0	

CODE	ACTIVITIES	PREREQUISITE	CHARACTER	SWL	SEM
ATV100			MANDATORY	120	

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

Required Courses Load on Bachelor Of Physics In Materials Science		Work Load
Mandatory Disciplines		2250
Elective Disciplines		300
Optative Disciplines		0
Facultative Disciplines		0
Activities		120
Extensions		0
	Total	2670

Required Courses Load on Bachelor Of Basic Physics		Work Load
Mandatory Disciplines		2250
Elective Disciplines		300
Optative Disciplines		0
Facultative Disciplines		0
Activities		120
Extensions		0
	Total	2670

Required Courses Load on LICENCIATURA		Work Load
Mandatory Disciplines		2130
Elective Disciplines		300
Optative Disciplines		0
Facultative Disciplines		0
Activities		120
Extensions		0
	Total	2550

Required Courses Load on LICENCIATURA		Work Load
Mandatory Disciplines		2130
Elective Disciplines		300
Optative Disciplines		0
Facultative Disciplines		0
Activities		120
Extensions		0
	Total	2550

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