



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



COURSE OF PHYSICS - 2026/1 (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 PHYSICS 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 PHYSICS 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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| CODE | ELECTIVE DISCIPLINES | PREREQUISITE | SWL/EWL | CWL | CLASSES | | SEM |
|--------|--|----------------------|---------|-----|---------|---|-----|
| | | | | | 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 | |



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



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