

PHYSICS DEGREE

ACADEMIC YEAR 2008/2009

Degree Physics

Centre Faculty of Sciences
C/ Francisco Tomás y Valiente, 7
Campus de Cantoblanco
28049 – Madrid
Phone: 91497 43 53
[Web page](#)

Academic Credits 300

1st and 2nd cycle

Total Credits	Compulsory Credits	Optional Credits	Free Election Credits	Total
First Cycle	164	0	16	180
Second Cycle	70	36	14	120
Total	234	36	30*	300

FIRST CYCLE

First Course	Compulsory Credits 58	Optional Credits 0	Free Election Credits *
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Code	Subject	Type	Credits	Semester
14892	Mathematical Analysis I	(Tr)	8	1
14894	Linear Algebra I	(Tr)	8	1
14898	General Physics I	(Ob)	8	1
14897	General Chemistry	(Ob)	6	1
14893	Mathematical Analysis II	(Tr)	8	2
14895	Linear Algebra II	(Tr)	8	2
14896	Experimental Techniques I	(Tr)	6	2
14899	General Physics II	(Ob)	6	2

Second Course	Compulsory Credits 60	Optional Credits 0	Free Election Credits *
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Code	Subject	Type	Credits	Semester
14900	Electromagnetism I	(Tr)	8	1
14902	Mechanics and Waves I	(Tr)	8	1
14904	Mathematical Methods I	(Tr)	8	1
14907	Introduction to Numerical Methods	(Ob)	6	1
14901	Electromagnetism II	(Tr)	8	2
14903	Mechanics and Waves II	(Tr)	8	2
14905	Mathematical Methods II	(Tr)	8	2
14906	Experimental Techniques II	(Tr)	6	2

Third Course	Compulsory Credits 46	Optional Credits 0	Free Election Credits *
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Code	Subject	Type	Credits	Semester
14908	Thermodynamics	(Tr)	9	1
14910	Quantum Physics I	(Tr)	8	1
14912	Mathematical Methods III	(Tr)	8	1
14909	Optics	(Tr)	9	2
14911	Quantum Physics II	(Tr)	6	2
14913	(1) Experimental Techniques III	(Tr)	6	Annual

SECOND CYCLE

Fourth Course	Compulsory Credits	Optional Credits	Free Election Credits
	43	12	*

Code	Subject	Type	Credits	Semester
14916	Statistical Physics	(Tr)	8	1
14917	Classical Electrodynamics	(Tr)	6	1
14918	Quantum Mechanics	(Tr)	8	1
14914	Electronics I	(Tr)	7	2
14915	Solid State Physics I	(Tr)	8	2
14919	Theoretical Mechanics	(Tr)	6	2

Fifth course	Compulsory Credits	Optional Credits	Free Election Credits
	27	24	*

Code	Subject	Type	Credits	Semester
14920	Electronics II	(Tr)	7	1
14923	Atomic and Molecular Physics	(Ob)	8	1
14921	Solid State Physics II	(Tr)	6	2
14922	Nuclear and Particle Physics	(Tr)	6	2

Optional Subjects Offer: Routes

THREE DIFFERENT ROUTES ARE OFFERED:

APPLIED PHYSICS ROUTE

CONDENSED MATTER PHYSICS ROUTE

THEORETICAL PHYSICS ROUTE

COMMON TO THE THREE ROUTES

Code	Subject	Type	Credits	Semester
14924	History of Physics	(Op)	6	1
14925	Physics of Fluids	(Op)	6	1
14926	Computational Physics	(Op)	6	1
14933	Advanced Statistical Mechanics	(Op)	6	2
14944	Experimental Techniques IV	(Op)	6	Annual

COMMON TO THE APPLIED PHYSICS AND CONDENSED MATTER PHYSICS ROUTES

Code	Subject	Type	Credits	Semester
14940	Spectroscopy	(Op)	6	1
14927	Photonic	(Op)	6	2
14935	Materials Science	(Op)	6	2
14942	Surface Physics	(Op)	6	2
14945	Experimental Techniques V	(Op)	6	Annual

COMMON TO THE CONDENSED MATTER PHYSICS AND THEORETICAL PHYSICS ROUTES

Code	Subject	Type	Credits	Semester
14934	Physics of Complex Systems	(Op)	6	1
14943	Introduction to Quantum Field Theory	(Op)	6	1
14932	Advanced Quantum Mechanics	(Op)	6	2

SPECIFIC TO THE APPLIED PHYSICS ROUTE

Code	Subject	Type	Credits	Semester
14936	Solid State Electronics	(Op)	6	1
14938	Solar Energy	(Op)	6	2
14939	Structure and Mechanical Properties of Materials	(Op)	6	2

SPECIFIC TO THE CONDENSED MATTER PHYSICS ROUTE

Code	Subject	Type	Credits	Semester
14941	Low Temperature Physics	(Op)	6	2

SPECIFIC TO THE THEORETICAL PHYSICS ROUTE

Code	Subject	Type	Credits	Semester
14929	Stellar Astrophysics	(Op)	6	1
14928	Gravitation and Cosmology	(Op)	6	2
14930	Galactic and Extragalactic Astrophysics	(Op)	6	2
14931	Elementary Particles	(Op)	6	2

FOUR YEARS

First Year

Code	Subject	Type	Credits	Semester
14892	Mathematical Analysis I	(Tr)	8	1
14894	Linear Algebra I	(Tr)	8	1
14898	General Physics I	(Ob)	8	1
14897	General Chemistry	(Ob)	6	1
14893	Mathematical Analysis II	(Tr)	8	2
14895	Linear Algebra II	(Tr)	8	2
14896	Experimental Techniques I	(Tr)	6	2
14899	General Physics II	(Ob)	6	2

Second Year

Code	Subject	Type	Credits	Semester
14900	Electromagnetism I	(Tr)	8	1
14902	Mechanics and Waves I	(Tr)	8	1
14904	Mathematical Methods I	(Tr)	8	1
14907	Introduction to Numerical Methods	(Ob)	6	1
14908	Thermodynamics	(Tr)	9	1
14901	Electromagnetism II	(Tr)	8	2
14903	Mechanics and Waves II	(Tr)	8	2
14905	Mathematical Methods II	(Tr)	8	2
14906	Experimental Techniques II	(Tr)	6	2

Third Year

Code	Subject	Type	Credits	Semester
14910	Quantum Physics I	(Tr)	8	1
14912	Mathematical Methods III	(Tr)	8	1
14913	Experimental Techniques III	(Tr)	6	1
14916	Statistical Physics	(Tr)	8	1
14917	Classical Electrodynamics	(Tr)	6	1
14909	Optics	(Tr)	9	2
14911	Quantum Physics II	(Tr)	6	2
14914	Electronics I	(Tr)	7	2
14915	Solid State Physics I	(Tr)	8	2

Fourth Year

Code	Subject	Type	Credits	Semester
14918	Quantum Mechanics	(Tr)	8	1
14920	Electronics II	(Tr)	7	1
14923	Atomic and Molecular Physics	(Ob)	8	1
14919	Theoretical Mechanics	(Tr)	6	2
14921	Solid State Physics II	(Tr)	6	2
14922	Nuclear and Particle Physics	(Tr)	6	2

(Tr): Troncal = Compulsory Credits

(Ob): Obligatorio = Compulsory Credits

(Op): Optativo = Optional Credits