

Faculty of Sciences

Bachelor of Science in Physics and Astronomy

Language of instruction: Dutch

Programme version 13

## 1 General Courses 165 credits

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C003080 <b>Programming</b> <i>Peter Dawyndt -- Department of Mathematics, Computer Science and Statistics</i>	5	UKV	1	A:1	150
2	C000857 <b>Mechanics</b> <i>Matthieu Boone -- Department of Physics and Astronomy</i>	6		1	A:1	180
3	C004203 <b>Mathematical Structures and Functions</b> <i>Jasson Vindas Diaz -- Department of Mathematics: Analysis, Logic and Discrete Mathematics</i>	5		1	A:1	150
4	C004606 <b>Linear Algebra</b> <i>Tom De Medts -- Department of Mathematics, Computer Science and Statistics</i>	5		1	A:1	150
5	C004205 <b>Chemistry</b> <i>Zeger Hens -- Department of Chemistry</i>	5		1	A:1	150
6	C004206 <b>Stars and Planets</b> <i>Sven De Rijcke -- Department of Physics and Astronomy</i>	6		1	A:2	180
7	C004207 <b>Electricity and Magnetism</b> <i>Bartel Van Waeyenberge -- Department of Solid State Sciences</i>	5		1	A:2	150
8	C004208 <b>Waves and Optics</b> <i>Henk Vrielinck -- Department of Solid State Sciences</i>	5		1	A:2	150
9	C004209 <b>Vector Analysis</b> <i>Hans Vernaëve -- Department of Mathematics: Analysis, Logic and Discrete Mathematics</i>	6		1	A:2	180
10	C004210 <b>Theoretical Mechanics</b> <i>Dimitri Van Neck -- Department of Physics and Astronomy</i>	6		1	A:2	180
11	C004211 <b>Physics and Astronomy Laboratory 1</b> <i>Natalie Jachowicz -- Department of Physics and Astronomy</i>	6		1	A:J	180
12	C004649 <b>Scientific Computing for Physicists [en]</b> <i>Toon Verstraelen -- Department of Physics and Astronomy</i>	5		2	A:1	150
13	C001195 <b>Statistics and Data Processing</b> <i>Arjen van der Wel -- Department of Physics and Astronomy</i>	6		2	A:1	180
14	C004213 <b>Vector and Function Spaces</b> <i>Jutho Haegeman -- Department of Physics and Astronomy</i>	5		2	A:1	150
15	C002240 <b>Quantum Mechanics 1</b> <i>Jan Ryckebusch -- Department of Physics and Astronomy</i>	6		2	A:1	180
16	C000104 <b>Thermal Physics</b> <i>Natalie Jachowicz -- Department of Physics and Astronomy</i>	6		2	A:2	180
17	C004214 <b>Galaxies</b> <i>Ilse De Looze -- Department of Physics and Astronomy</i>	6		2	A:2	180
18	C004215 <b>Materials Physics</b> <i>Jolien Dendooven -- Department of Solid State Sciences</i>	5		2	A:2	150
19	C004216 <b>Relativity and Electromagnetism [en]</b> <i>Archisman Ghosh -- Department of Physics and Astronomy</i>	6		2	A:2	180
20	C004217 <b>Groups and Representations</b> <i>Frank Verstraete -- Department of Physics and Astronomy</i>	4		2	A:2	120

21	C004218	Physics and Astronomy Laboratory 2 [en, nl] <i>Bartel Van Waeyenberge -- Department of Solid State Sciences</i>	6	2	A:J	180
22	C002245	Quantum Mechanics 2 <i>Nick Bultinck -- Department of Physics and Astronomy</i>	6	3	A:1	180
23	C004219	Complex Analysis <i>Nele Vandersickel -- Department of Physics and Astronomy</i>	4	3	A:1	120
24	C004220	Statistical Physics <i>Jan Ryckebusch -- Department of Physics and Astronomy</i>	6	3	A:1	180
25	C004221	Structure of the Universe <i>Arjen van der Wel -- Department of Physics and Astronomy</i>	6	3	A:1	180
26	C004227	Research Skills [en, nl] <i>Christophe Detavernier -- Department of Solid State Sciences</i>	3	3	A:J	90
27	C004222	Atomic and Molecular Physics <i>Jonas Joos -- Department of Solid State Sciences</i>	5	3	A:2	150
28	C001063	Solid State Physics <i>Christophe Detavernier -- Department of Solid State Sciences</i>	6	3	A:2	180
29	C004223	Nuclear Physics [en] <i>Natalie Jachowicz -- Department of Physics and Astronomy</i>	4	3	A:2	120
30	C004224	Elementary Particle Physics [en] <i>Didar Dobur -- Department of Physics and Astronomy</i>	4	3	A:2	120
31	C004228	Bachelor's Project Physics and Astronomy [en, nl] <i>Matthieu Boone -- Department of Physics and Astronomy</i>	6	3	A:J	180

## 2 Elective Courses

15 credits

Subscribe to 1 track from the following list. Subject to approval by the faculty.  
Students who have followed the Educational Track, can enter directly into the educational master's programme.

### 2.1 Physics and Astronomy Track

15 credits

Subscribe to 15 credit units from no less than 1 and no more than 2 modules from the following list.

#### 2.1.1 Elective Courses Physics and Astronomy

Nr	Course	CRDT	Ref	MT1	Session	Study
1	C004650 Dynamical Systems in Nature [en] <i>Nele Vandersickel -- Department of Physics and Astronomy</i>	6			A:1	180
2	C004449 Physics of Surfaces and Thin Films <i>Diederik Depla -- Department of Solid State Sciences</i>	6			A:1	180
3	C004225 Physics for Citizens <i>Philippe Smet -- Department of Solid State Sciences</i>	4	UKV		A:1	120
4	C000925 Electronics <i>Dirk Poelman -- Department of Solid State Sciences</i>	6			A:2	180
5	C004226 Project Work <i>Sven De Rijcke -- Department of Physics and Astronomy</i>	3			A:J	75
6	C003756 Artificial Intelligence <i>Yvan Saeys -- Department of Mathematics, Computer Science and Statistics</i>	6			A:1	180

#### 2.1.2 Elective Courses UGent or other Universities

Courses can be chosen from the bachelor's programmes offered by UGent or a [Erasmus+ partner university](#). The course 'Powerful Learning Environments' from the educational track can also be chosen here. At least 9 credits has to be chosen from the course units offered by the Faculty of Sciences and / or the Faculty of Engineering and Architecture and/or their equivalent to the Erasmus+ partner university.

### 2.2 Educational Track

15 credits

Subscribe to 15 credit units from the following list.

Nr	Course	CRDT	Ref	MT1	Session	Study
1	H002476 Powerful Learning Environments <i>Bram De Wever -- Department of Educational Studies</i>	6		2	A:1	180
2	H002580 Teaching Methodology: Physics <i>Stefaan Cottenier -- Department of Electromechanical, Systems and Metal Engineering</i>	9	a	3	J:J	270
3	H002608 Teaching Methodology: STEM Focus STEM <i>Katrien Strubbe -- Department of Chemistry</i>	9	b	3	J:J	270

#### Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the course name, using the following ISO codes:

bg: Bulgarian	de: German	es: Spanish	ja: Japanese	pl: Polish	sh: Croatian/Serbian	zh: Chinese
cs: Czech	el: Greek	fr: French	nl: Dutch	pt: Portuguese	sl: Slovene	
da: Danish	en: English	it: Italian	no: Norwegian	ru: Russian	sv: Swedish	

#### Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2. When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned.

When a semester is shown in brackets, the course is not offered this year in the specific offering.

The offering frequency and first year of offering are indicated by the following codes:

a: bi-annually	c: annually, from 2027-2028	f: annually, from 2028-2029	i: annually, from 2029-2030
b: tri-annually	d: bi-annually, from 2027-2028	g: bi-annually, from 2028-2029	j: bi-annually, from 2029-2030
	e: tri-annually, from 2027-2028	h: tri-annually, from 2028-2029	k: tri-annually, from 2029-2030