

Welcome to the Master in Physics and Astronomy

Prof. Dr. Alberto Mariotti

Information on Master of Science in Physics and Astronomy:

<https://www.vub.be/en/studying-vub/all-study-programmes-vub/bachelors-and-masters-programmes-vub/master-in-physics-and-astronomy>

Master in Physics @ VUB

✦ *Chair of examination committee: Prof. Alberto Mariotti*

✦ *Secretary: Prof. Stijn Buitink*

✦ *Two orientations:* * *High energy physics*
* *Complex Systems*

Components of the Master degree (120 ECTS)

- ECTS system: 60 credits per year (average)
- Master thesis: 30 credits

<https://www.vub.be/en/studying-vub/all-study-programmes-vub/bachelors-and-masters-programmes-vub/master-in-physics-and-astronomy/program/master/master-physics-and-astronomy-minor-research>

Courses: 1st year

◆30 ECTS mandatory courses

<i>ECTS Credits</i>	<i>Course</i>	<i>Titularis</i>	<i>Semester</i>
<i>6ECTS credits - High-Energy Astrophysics</i>		<i>Stijn Buitink</i>	<i>1st Semester</i>
<i>6ECTS credits - Computational Physics</i>		<i>Sophie de Buyl Stijn Buitink</i>	<i>1st Semester</i>
<i>6ECTS credits - Quantum Field Theory</i>		<i>Alexandre Sevrin</i>	<i>1st Semester</i>
<i>6ECTS credits - Subatomic Physics II</i>		<i>Alberto Mariotti Jorgen D'Hondt</i>	<i>2nd Semester</i>
<i>6ECTS credits - General Relativity</i>		<i>Christoph Uhlemann</i>	<i>1st Semester</i>

◆30 ECTS elective courses

This is minor
research

Courses: 2nd year

◆ **18 ECTS Elective courses + master thesis 30 ECTS**

◆ **12 ECTS in mobility**

They could be done in first year too

- *More than 40 elective courses....*

Suggested VUB electives for the High Energy orientation

Astroparticle Physics	6
Early Universe Cosmology	6
Electroweak and Strong Interactions	6
Evolution of Stars and Stellar Systems	6
Experimental Techniques in Particle Physics	6
Extensions of the Standard Model	6
Object Oriented Programming (C++) for Physicists	6

Suggested electives for the Complex Systems orientation

Modeling complex systems	6
Statistical Foundations of Machine Learning	6
Advanced Statistical Mechanics - KUL - see hyperlink below*	6
Complexity and Criticality - UGent - see hyperlink below*	6

Others than the list can be also chosen, but should be approved by chairman

The master thesis in Physics

30 ECTS

- To be done during the second year of the master
- Search the promotor during second semester of first year
- Possibility of doing thesis at UGent
- Possible topics will be given in *see next presentations*
- Enrol for it in central system and on Canvas dedicated page

More informations: <https://canvas.vub.be/courses/30841>

For more information contact the chairman of the examination committee: Prof. Alberto Mariotti

The master thesis in Physics

- Sign agreement with promotor by 15th October
- Deadline for submission is Friday 31 May 2024 at noon
- No rules about length
- Defence is end of Examination period
- Possible to defend it in second session
- Two readers (to be discussed with your promotor)
- Evaluation criteria: Research work, manuscript, public defence

You will get
an email

PLEASE
READ

Regulations: <https://canvas.vub.be/courses/30841>

Mobility is required. **Plan it in ADVANCE !!!**

At least 10 ECTS, obtained as:

- ✓ Course in other university (e.g. Gent U., ULB, ...)
- ✓ Summer school (e.g. Amsterdam-Brussels-Paris doctoral school, CERN summer school, ...)
- ✓ Stage (CERN, Royal Observatory of Belgium, private company,...)
- ✓ Erasmus stay abroad
- ✓ On line form to submit mobility proposal at beginning of semester

https://docs.google.com/forms/d/e/1FAIpQLSf_iEq19kr-6rdai3iRpfcEDp5Pmoks9XJWdYPHV9Mkl18N-w/

**Contact persons: Prof. S. Lowette and Prof. A. Mariotti*

*For more details ask
the contact persons*

Calendar of academic year

ACADEMIC YEAR 2023-2024

We are here

From - till	Activities		Week
18/09/23 24/09/23	Welcome week ^(a) Start of classes for Bruface students		1
25/09/23 01/10/23	Mon 25.09.23 Tue 26.09.23	Start of classes Academic opening	2
02/10/23 08/10/23			3
09/10/23 15/10/23			4
16/10/23 22/10/23			5
23/10/23 29/10/23			6
30/10/23 05/11/23	Wed 01.11.23 Thu 02.11.23	Bank Holiday VUB Holiday	7
06/11/23 12/11/23	Sat 11.11.23	Bank Holiday	8
13/11/23 19/11/23			9
20/11/23 26/11/23	Mon 20.11.23	VUB Holiday – Verhaegen Commemoration	10
27/11/23 03/12/23			11
04/12/23 10/12/23			12
11/12/23 17/12/23			13
18/12/23 24/12/23			14

https://www.vub.be/sites/default/files/2023-05/academische-kalender-2023-2024_EN_0.pdf

25/12/23 07/01/24	Winter Holiday		15-16
	Mon 25.12.23	Bank Holiday	
	Tue 26.12.23 - Sun 31.12.23	VUB closed	
	Mon 01.01.24	Bank Holiday	

Lecture Weekly Plan

Numbers refer to academic calendar weeks

25-09-2023 - 01-10-2023 wk02-wk02 Ma-Vr 1MA Physics and Astronomy - Minor Research (2324), WE

	Ma	Di	Wo	Do	Vr
08:00					
09:00	wk02 Simulation of Physics Phenomena and Detectors in Modern Physics (2324) G.0.120 Eurodemo Lowette Steven Hoorcollege, Werkcollege	wk02 Computational Physics (2324) G.1.003 ELEM Buitink Stijn Hoorcollege Computational Physics 4015687FNR (Algemeen 2324)			
10:00	Simulation of Physics Phenomena and Detectors in Modern Physics 4016549FNR (Algemeen 2324), Simulation of Physics Phenomena and Detectors in Modern Physics 4016549FNR (WPO1 2324)	wk02 Computational Physics (2324) G.1.003 ELEM Buitink Stijn, De Buyt Sophie Werkcollege Computational Physics 4015687FNR (WPO1 2324)			
11:00					
12:00					
13:00					
14:00		wk02 High-Energy Astrophysics (2324) E.3.08 Buitink Stijn Hoorcollege, Werkcollege High-Energy Astrophysics 4015685FNR (Algemeen 2324), High-Energy Astrophysics 4015685FNR (WPO1 2324) Etterbeek 4015685FNR 1MA Physics and Astronomy - Minor Economy			wk02 General Relativity (2324) i.1.06 Arvanitakis Alexandros Spyridon Hoorcollege, Werkcollege General Relativity 4015691FNR (Algemeen 2324), General Relativity 4015691FNR (WPO1 2324) Etterbeek 4015691FNR 1MA Physics and Astronomy - Minor Economy and Business (2324), 1MA Physics and Astronomy - Minor Education (2324)
15:00					
16:00					
17:00					
18:00					

<https://www.vub.be/en/studying-vub/practical-info-for-students/class-and-exam-schedules/class-schedules>

Where to find further information?

★ ***Website of the faculty (soon a new one)***

<https://www.vub.be/en/about-vub/faculties-institutes-and-campuses/our-faculties/sciences-and-bioengineering-sciences>

★ ***Material for courses***

<https://canvas.vub.be>

★ ***Canvas page of the bachelor and master in physics and astronomy***

<https://canvas.vub.be/courses/30841>

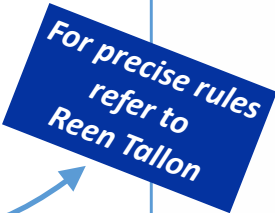
★ ***Ask professors and your peers!***

Rules

Flexibility <--> Responsibility

- 1. Pass all exams with at least 10/20*
- 2. Obtain certain percentage of your proposed credit*
- 3. You can register twice for a course*
- 4. Second session always in August-September*

For precise rules
refer to
Reen Tallon



Advices and help

- ★ ***Motivation and intense study is necessary***
- ★ ***Study on regular basis (and on the weekend)***
- ★ ***Study during the semester, not last minute***
- ★ ***Study in groups can help***
- ★ ***In case, give priority to old exams***
- ★ ***Ask for help***
- ★ ***Aid is available at the Student Guidance Center***
<https://www.vub.be/en/studying-vub/practical-info-for-students/study-guidance>

Job opportunities

***Physics master degree opens many job opportunities,
in private and public sectors***

- *VUB organises job fairs for students*
- *VUB provides job service for student: VUB Career Center*
<https://www.vub.be/en/studying-vub/all-study-programmes-vub/personal-development-during-your-studies/career-coaching>

Who to ask for

- ★ Regulations and other administrative aspects: study counselor **Reen Tallon** (WE, 4F secretariat)
- ★ Individual study programs (content aspects, including elective courses): Chairman of the Examination committee **Prof. Alberto Mariotti**
- ★ Erasmus & Mobility (during the master): **Prof. Steven Lowette** and / or **Prof. Alberto Mariotti**
- ★ Refund ticket mobility: **Student secretariat WE** (4F)

... who to ask ...

* ***Nina Hindrikkx***

* ***Secretariaat fysica***

* ***9F03***
***(on campus:
Tuesday and Thursday)***



Good luck!!!

