

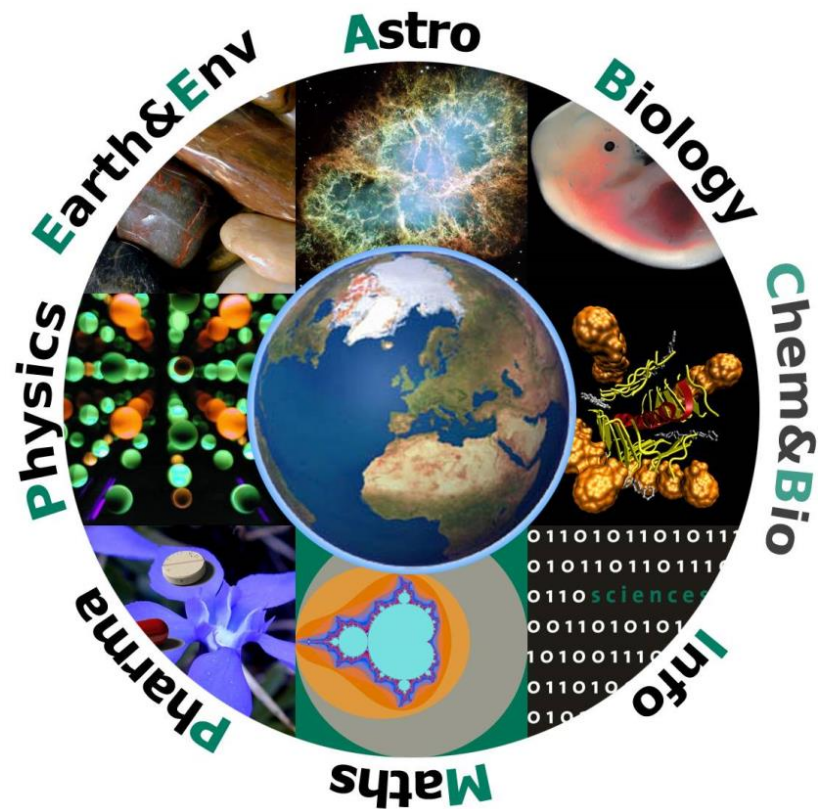


UNIVERSITÉ  
DE GENÈVE  
FACULTY OF SCIENCE

# Studying Astrophysics

2020-2021

Sciences



## IMPORTANT DATES

### **AUTUMN SEMESTER 2020 – 2021**

<i>Astro student welcome</i>	<i>Friday 11 September 2020</i>
<i>Start of the courses</i>	<i>Monday 14 September 2020</i>
<i>Course registration</i>	<i>Tuesday 13 Oct → Monday 19 Oct 2020</i>
<i>Exam registration</i>	<i>Tuesday 27 Oct → Monday 2 Nov 2020</i>
<i>End of exam cancellation</i>	<i>Thursday 3 December 2020</i>
<i>End of the courses</i>	<i>Friday 18 December 2020</i>
<i>Exam period start</i>	<i>Monday 25 January 2021</i>
<i>Exam period end</i>	<i>Friday 12 February 2021</i>

### **SPRING SEMESTER 2021**

<i>Start of the courses</i>	<i>Monday 22 February 2021</i>
<i>Course registration</i>	<i>Tuesday March 9 → Monday 15 March 2021</i>
<i>Exam registration</i>	<i>Tuesday 23 March → Monday 29 March 2021</i>
<i>End of exam cancellation</i>	<i>Thursday 20 May 2021</i>
<i>End of the courses</i>	<i>Friday 4 June 2021</i>
<i>Exam period start</i>	<i>Monday 14 June 2021</i>
<i>Exam period end</i>	<i>Friday 2 July 2021</i>
<i>Exam registration</i>	<i>Tuesday 20 July → Monday 26 July 2021</i>
<i>End of exam cancellation</i>	<i>Thursday 12 August 2021</i>
<i>Exam period start</i>	<i>Monday 30 August 2021</i>
<i>Exam period end</i>	<i>Friday 10 September 2021</i>

### **HOLIDAYS**

<i>Easter vacation</i>	<i>Friday 2 → Sunday 11 April 2021</i>
<i>Labor Day</i>	<i>Saturday 1 May 2021</i>
<i>Ascension Day</i>	<i>Thursday 13 May 2021</i>
<i>Whit Monday</i>	<i>Monday 24 June 2021</i>
<i>« Jeûne Genevois »</i>	<i>Thursday 9 September 2021</i>

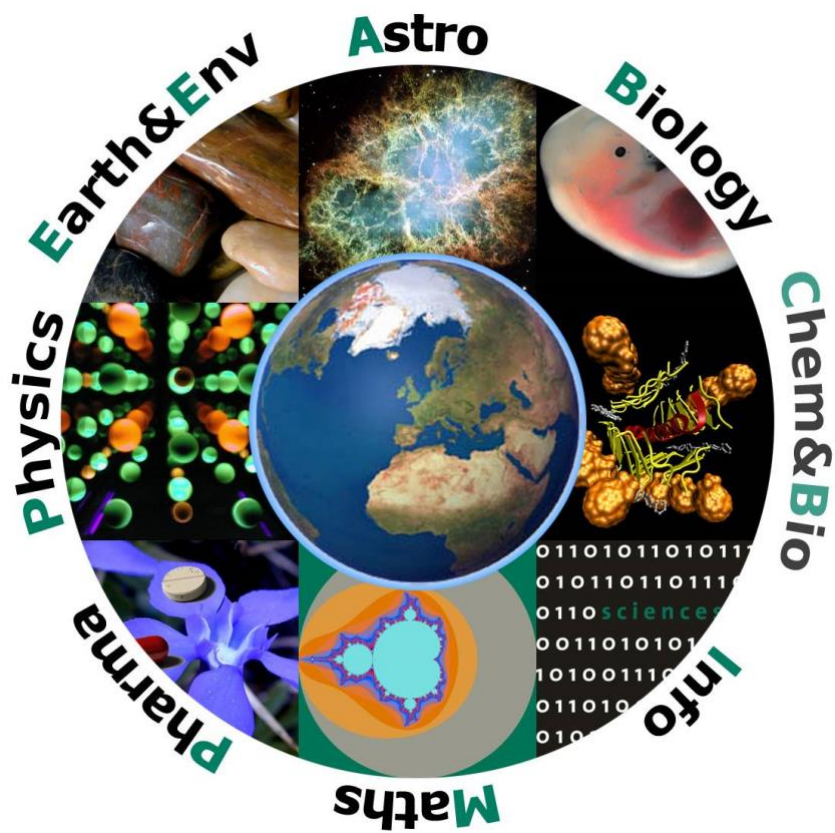
**AUTUMN SEMESTER 2021 – 2022** *Monday 13 September 2021*

See here:

<https://www.unige.ch/sciences/fr/informationspratiques/dates/>

<https://www.unige.ch/sciences/en/informationspratiques/dates/>

# General Information



# CONTENTS



UNIVERSITÉ  
DE GENÈVE

FACULTY OF SCIENCE

## Important dates

## General information

- Faculty of Science
- Managing your study and exams
- Plagiarism
- Faculty and University Services

## Studying Astrophysics

- Department of Astronomy
- Overview of the Master in Astrophysics
- Common Programme and Specialisations
- Course Schedule
- Course list and description

## PREAMBLE

The Faculty of Science of the University of Geneva is known worldwide for its research work. The Nobel Prize in Physics in 2019 for the discovery of the first planet outside the solar system, the Fields Medal, considered the equivalent of the Nobel Prize in mathematics, the achievements in quantum teleportation, and studies of the genetics of embryonic development are just a few examples of intense activity in a wide range of fields: astronomy, biology, chemistry, computer science, mathematics, physics, pharmaceutical sciences, and Earth and environmental sciences. Another important mission of the Faculty of Science is teaching and training. These missions are strongly linked, with teachers expected to be at the forefront of research at the university level.

This document consists of two parts: a first "Faculty" part, containing information on the organization of the University and the Faculty of Science, as well as useful addresses and various practical information on exam sessions, inter-university exchanges, sports and health, and plagiarism. The second part is the student guide, which gives practical information (schedules, course information, etc.) specific to your sector. A reminder of the important dates as well as the site plan of the main buildings is included on the inside pages of the cover. It is our hope that students will quickly feel at home in this Faculty, which delivers the broadest diversity of teaching and titles of the University.

Each branch (Biology, Chemistry, Biochemistry, Mathematics, Physics, Earth and Environmental Sciences, and Pharmaceutical Sciences) is under the responsibility of a subdivision called Section. In addition, Computer Sciences/informatics, Earth and Environmental Sciences, and Astronomy are organized in Departments.

As a student, you are primarily interested in your training. Nevertheless, we encourage you to participate equally in the life of the institution, whether it is to elect members representing you at the various councils or to be part of it. It should be noted that there are councils at all levels, bringing together faculty representatives, teaching and research associates, students, and administrative and technical staff:

- University Assembly
- Participatory Council of the Faculty
- Section/Department Council

You are also encouraged to join the student association of your sector.

Finally, I would like to wish the students success in their studies, which they will undoubtedly find demanding but exciting, as sciences are. In case of difficulties, faculty members, counsellors, and administrative services are also at your disposal.

The Dean

## THE FACULTY OF SCIENCE PRESENTS ITSELF

The University of Geneva is one of thirteen European universities, and the only Swiss university, founding member of the European League of Research Universities. Recently, the University entered the very closed club of the hundred best academic institutions in the world according to the Shanghai ranking. With the University and the ETH of Zurich, the researchers of the University of Geneva also lead in securing competitive research grants from the National Science Foundation. In addition, the University of Geneva offers the opportunity to become science teachers (one of only two Swiss universities with a teaching and research team at the faculty level). Finally, our University is the most international, both in the diversity of its students and teachers.

The Faculty of Science is one of the spearheads of this success. It includes more than 2650 students (45% of whom are female), 150 professors, 1000 teaching and research staff (teaching assistants research masters, lecturers, assistant professors, full professors etc.) and some 530 administrative and technical staff. The Faculty comprises eight subdivisions corresponding to the fields of research and teaching: six Sections and two Departments directly attached to the Faculty. An attached Section or Department often also has its own academic advisor.

The Faculty of Science awards *bachelor*, *master*, and *doctorate* (PhD) degrees in the European Higher Education Area and Bologna Process. This process harmonizes the titles and corresponding study durations. It also introduces a system of transferable credits (ECTS) that allows a European university to recognize full or partial studies at another European university. The training offer of the Faculty of Science is extensive, both in terms of basic and advanced training. The teaching is divided into more than 400 courses, practical work and seminars. Students have access to more than 50 different titles (bachelor, master, bi-disciplinary master's, doctorate, as well as complementary certificates and masters of advanced studies (MAS), including a master's degree in secondary education).

At the Faculty of Science, research occupies a very important place. Approximately 630 students prepare a doctoral thesis, and more than 150 doctoral titles being delivered annually. This research results in more than 1000 scientific publications per year. Regarding teaching and research, the Faculty of Science maintains collaborations with numerous regional, national and international institutions. The Faculty of Science has also developed links with organizations such as CERN, WHO, the European Life Sciences Organisation, and the European Space Agency.

Finally, the annual budget of the Faculty of Science is about 150 million francs. The value of scientific equipment is around 135 million. We should also mention the importance of funds from sources other than the Canton of Geneva, such as the Swiss National Science Foundation, European funds or industry. These resources now make up more than 50 million francs, or 33% of the budget of the Faculty of Science.

## ADDRESSES

### FACULTY OF SCIENCE

30, quai Ernest-Ansermet, 1211 Genève 4  
T 022 379 66 52 – F 022 379 66 98

### DEAN'S OFFICE AND ADMINISTRATION

#### Dean

Prof. Jérôme LACOUR, Sciences II, bureau 4-506  
T 022 379 66 51 et 379 66 52 – F 022 379 66 98

#### Vice-deans

Professor  
Costanza BONADONNA  
Maraîchers A, 107b  
T 022 379 30 55

Professor  
Martin GANDER  
Secrétariat des étudiants  
T 022 379 66 62

Professor  
Christoph RENNER  
Ecole de physique, 010C  
T 022 379 35 44

Professor  
Jean-Luc WOLFENDER  
CMU, B06.1716.a  
T 022 379 33 85

#### Administrator

M. Bernard SCHALLER, Sciences III, bureau 4-504  
T 022 379 32 30

### SECTION PRESIDENTS AND DEPARTMENT DIRECTORS

#### Biology Section:

Prof. Michel MILINKOVITCH  
Quai Ernest-Ansermet 30, 1211 Genève 4  
T 022 379 33 38

#### Chemistry and biochemistry Section:

Prof Thomas BÜRGI  
Quai Ernest-Ansermet 30, 1211 Genève 4  
T 022 379 65 52

#### Mathematics Section:

Prof. Andras SZENES  
Rue du Lièvre 2-4, 1227 Acacias  
T 022 379 00 95

#### Physics Section:

Prof. Giuseppe IACOBUCCI  
Quai Ernest-Ansermet 24, 1211 Genève 4  
T 022 379 62 45

#### Pharmaceutical sciences Section:

Prof. Jean-Luc VEUTHEY  
Rue Michel-Servet 1, 1211 Genève 4  
T 022 379 68 08

#### Earth and environmental sciences Section:

Prof. Vera SLAVEYKOVA  
Rue des Maraîchers 13 bis, 1211 Genève 4  
T 022 379 03 35

#### Department of Astronomy:

Prof. Francesco PEPE  
Chemin des Maillettes 51, 1290 Versoix  
T 022 379 23 96

#### Department of Informatics:

Prof. Bastien CHOPARD  
Route de Drize 7, 1227 Carouge  
T 022 379 0219

## QUESTIONS?

### Student Secretariat

The student secretariat is located on the ground floor of building Sciences III, office 0003. It is open every morning from 9.30 am to 12 noon and on Tuesdays and Thursdays from 2 pm to 4 pm. The secretariat manages student files, receives examinations, sets examination schedules, submits diploma request and change of address forms, issues test reports after examinations. sessions.

T 022 379 66 61/62/63 - F 022 379 67 16 - Secretariat-Etudents-sciences@unige.ch  
<https://www.unige.ch/sciences/en/espaceetudiant/secretariatetudiants/>

### Faculty Advisor

Dr. Xavier CHILLIER is available all year by appointment (registration on his door) in the 0001 office on the ground floor of the building Sciences III. In addition, during class periods, a permanence (without appointment) is set up on Monday between 17-18h and Tuesday from 10-12h.

The student counsellors are open to all students. They propose a personalized orientation on the paths of training offered by the Faculty of Science, present the study plans and the subjects, discuss a possible reorientation. In case of any difficulty in the studies (school, material, health, language, comprehension or other), it is advisable to inform without delay the student advisor/counsellor.

T 022 379 67 15 [Conseiller-etudes-sciences@unige.ch](mailto:Conseiller-etudes-sciences@unige.ch)

For more details the student can contact the academic adviser/counsellor of the corresponding section.

### STUDENT COUNSELLORS OF THE SECTIONS/DEPARTMENTS

<b>Biology Section:</b>	Dr. Audrey BELLIER T 022 379 66 65 – <a href="mailto:Audrey.Bellier@unige.ch">Audrey.Bellier@unige.ch</a>
<b>Chemistry and biochemistry Section:</b>	Dr. Didier PERRET T 022 379 31 87 – <a href="mailto:Didier.Perrret@unige.ch">Didier.Perrret@unige.ch</a>
<b>Mathematics Section:</b>	Dr. David CIMASONI T 022 379 11 39 – <a href="mailto:conseil-etu-math@unige.ch">conseil-etu-math@unige.ch</a>
<b>Physics Section:</b>	Prof. Xin WU ( <i>bachelor</i> ) T 022 379 62 72 – <a href="mailto:conseiller-etudes-bachelor-physique@unige.ch">conseiller-etudes-bachelor-physique@unige.ch</a> Prof. Patrycja Paruch ( <i>master</i> ) T 022 379 35 46 – <a href="mailto:conseiller-etudes-master-physique@unige.ch">conseiller-etudes-master-physique@unige.ch</a>
<b>Earth and environmental sciences Section:</b>	Prof. Robert MORITZ T 022 379 66 33 – <a href="mailto:Robert.Moritz@unige.ch">Robert.Moritz@unige.ch</a>



**Pharmaceutical sciences**

**Section:**

Dr. Elisabeth RIVARA-MINTEN

T 022 379 65 82 ou 379 36 55 – [SecEtu-Pharm@unige.ch](mailto:SecEtu-Pharm@unige.ch)

**Department of Astronomy:**

Prof. Daniel SCHAERER

T 022 379 24 54 – [Daniel.Schaerer@unige.ch](mailto:Daniel.Schaerer@unige.ch)

**Department of Informatics:**

Prof. Stéphane MARCHAND-MAILLET

T 022 379 01 54 – [Stephane.Marchand-Maillet@unige.ch](mailto:Stephane.Marchand-Maillet@unige.ch)

## COUNSELLOR OF THE ARMY-UNIVERSITY LIAISON OFFICE

**For the entire Faculty:** Prof Sébastien CASTELLTORT  
Department of Earth Sciences  
13, rue des Maraîchers, 1205 Genève  
*Contact only by e-mail :* [Sebastien.Castelltort@unige.ch](mailto:Sebastien.Castelltort@unige.ch)

### OBJECTIVES

The mission of this office is to assist Swiss nationals in reconciling their studies and military duties, should difficulties arise. More information can be obtained here

<https://www.unige.ch/sciences/fr/espaceetudiant/liaisonarmeeuni/> .

## MANAGE YOUR STUDIES AND EXAMS

### Registration at the University of Geneva

Office 222, located at Uni Dufour, deals with all matters concerning registration, semester registration and registration. It provides Faculty change formulas, addresses of foreign universities as well as information for auditors.

<https://www.unige.ch/admissions/en>

### Academic calendar

The academic year consists of two semesters of 14 weeks each, beginning at Monday, September 14, 2020 (Autumn Semester) and Monday, February 22, 2021 (Spring Semester) respectively. Exam periods are 25 January to 12 February 2021, and 14 to 2 July 2021.

<https://www.unige.ch/sciences/en/informationspratiques/horaires/calendrieracademique/>

### Duration of studies

The duration of the studies is 6 semesters (180 ECTS credits) for the bachelor degree, 3 or 4 semesters (90 or 120 ECTS credits) for a master, 2 to 4 semesters for the MAS and 6 to 10 semesters for a doctorate.

### Regulations and study plans

This document is valid for study plans, deadlines, exams, organisation of studies, from the first semester of studies until the title is obtained. It consists of a general regulation applicable to all students of the Faculty and regulations and study plans valid for each title awarded. It can be consulted on the Faculty's website at

<https://www.unige.ch/sciences/en/enseignements/formations/>

All regulations have been revised to conform to the Bologna Process since 2004.

### Schedule of classes and practical work

The schedules are distributed by the secretariats of the Sections, and the Departments of Informatics and Astronomy, as of September.

### Courses

Students must register for courses on the portal.unige.ch on specific dates, indicated on the UNIGE website and at the beginning of this guide, in principle:

- in October for autumn and annual courses
- in March for spring classes.

Course registrations determine exam enrolment. Each student must ensure that she/he is correctly registered, no late registration being taken into account. Students taking courses in other faculties must check with the student secretariats concerned as dates and procedures vary from faculty to faculty.

In case of any problems, the student must send an email to the Student Secretariat during the same period - [Secretariat-Etudiants-sciences@unige.ch](mailto:Secretariat-Etudiants-sciences@unige.ch).

## **Exams Sessions**

The exams are divided into three sessions during the year: January / February, June and August / September. Sessions last two or three weeks.

## **Registration**

Students must register for the exams on the portal.unige.ch on the dates indicated at the beginning of this guide. For students, whose course does not allow online registration, exam registration is taken at the Student Secretariat on the same dates. Each student must ensure that he / she is correctly registered, as no late entries are taken into account. Students taking courses in other faculties must check with the student secretariats concerned as dates and procedures vary from faculty to faculty.

In case of any problems, the student must send an email to the Student Secretariat during the same period - [Secretariat-Etudiants-sciences@unige.ch](mailto:Secretariat-Etudiants-sciences@unige.ch).

## **Academic record of examinations**

The Student Secretariat keeps track of each student. The academic record includes, in particular, minutes of examinations, the grades and result of each examination. The original is given to the student and is completed after each session. A final report, signed by the dean, is given to the student upon completion of the title.

## **Application for a change of diploma**

Students wishing to change degrees must complete the Graduation Form, available on the Student Secretariat web pages, at the beginning of the autumn semester.

<https://www.unige.ch/sciences/en/espaceetudiant/secretariatetudiants/>

## **Leave request**

The Dean may grant a leave to students who requests it. With exception, the total duration of the leave cannot exceed 3 semesters for a bachelor and 2 semesters for a master. The leave request form, available on the web pages of the Student Secretariat, must reach the dean at least 1 month before the beginning of the semester.

<https://www.unige.ch/sciences/en/espaceetudiant/secretariatetudiants/>

## **Mobility**

### ***Mobility in Switzerland***

A mobility stay can be organized on the basis of agreements between Swiss universities - <https://www.unige.ch/exchange/en/propos/>

### ***Mobility abroad***

Possibilities for a stay at a foreign university exist on the basis of bilateral agreements - <https://www.unige.ch/exchange/en/outgoing/why-study-abroad/>

### ***Mobility counter***

T 022 379 80 86 - GuichetMobilite@unige.ch

<https://www.unige.ch/exchange/en/outgoing/why-study-abroad/students/get-started/where-get-information/>

Address: Uni-Mail, Boulevard du Pont-d'Arve 40, 1211 Geneva 4, room R055

Opening hours: Monday to Friday 10 am to 1 pm

### **Opposition and appeal procedures**

In case of opposition to a decision or appeal following an opposition-decision taken by the university bodies, refer to the internal rules on opposition and appeal procedures (RIO). This regulation can be consulted on the website [www.unige.ch/rectorat/static/RIO-UNIGE.pdf](http://www.unige.ch/rectorat/static/RIO-UNIGE.pdf)

## PLAGIARISM

While the Faculty of Science's mission is to excel in the fields of research and teaching, it attaches particular importance to the means used to achieve this goal. The Faculty obviously subscribes to the Geneva University Charter of Ethics and Professional Conduct (<https://www.unige.ch/ethique/charter/>), whose four main points are the search for truth, the freedom of teaching and research, responsibility to the academic community, society and environment, and respect for the person. It does not tolerate unethical behaviour.

Thus, we remind you that fraud, plagiarism or even the attempt of fraud or plagiarism are sanctioned by a 0.00 at the evaluation concerned. In addition to the academic sanctions, disciplinary sanctions up to the final exclusion of the University of Geneva can be pronounced. In addition, and in the most serious cases, the Faculty may file a criminal complaint. Conscious that the emergence of the Internet and the development of new computer tools facilitate fraud and plagiarism, either deliberately or by ignorance of certain rules, we strongly encourage you to visit <https://www.unige.ch/universite/politique-generale/plagiat/> as well as the "Plagiarism" module on the InfoTrack self-training website (<https://infotrack.unige.ch/en>).

## NEED SOME HELP?

### Social Security benefits

The social service of the Social Health Centre helps you to manage social problems, understand them and act effectively to solve them. Social workers are trained in social issues that students may encounter.

T 022 379 77 79 - [www.unige.ch/dife/sante-social/](http://www.unige.ch/dife/sante-social/)

Address: rue de Candolle 4, 1211 Geneva 4

### Student Associations of the Faculty

There is an association of students for most Sections; do not hesitate to be part of it!

<https://www.unige.ch/asso-etud/aesc/>

For physics, for example see <https://www.unige.ch/sciences/en/lafaculte/associationsetudiants/>

### Student Union

The University Conference of Student Associations (CUAE) aims to defend the interests of the students of the University.

T 022 379 87 97 - [cuae@unige.ch](mailto:cuae@unige.ch) - [www.cuae.ch](http://www.cuae.ch)

Address: Uni-Mail, 102 bd Carl-Vogt, 1211 Geneva 4

### Housing Office

T 022 379 77 20 - <https://www.unige.ch/batiment/service-batiments/logements/en/>

Address: rue des Battoirs 7, 1211 Geneva 4 - Schedule: Monday to Friday 9h-13h

### To make ends meet

#### Employment Office

T 022 379 77 02 - F 022 379 11 37 - [carriere@unige.ch](mailto:carriere@unige.ch)

<https://www.unige.ch/dife/carriere/etudiants/>

<http://www.unige.ch/dife/emploi/>

Address: rue de Candolle 4, 1211 Geneva 4 - Schedule: Monday to Friday 9h-13h

### For moderate income

#### Financial aid - Scholarships

The social service of the Social Health Centre helps you to manage your financial problems, understand them and act effectively to solve them. Social workers are trained in the financial issues that students may encounter.

[www.unige.ch/dife/social-finances/aides-financieres](http://www.unige.ch/dife/social-finances/aides-financieres)

### Study allowances

#### Scholarships and Loans Service

<https://www.ge.ch/obtenir-bourse-pret-etudes-apprentissage>

# MENTAL AND PHYSICAL HEALTH

## Mental health

### Cultural activities

Cine-club / dance / images / words / music / encounters / theater - [www.unige.ch/dife/culture/](http://www.unige.ch/dife/culture/)

### University Press

Campus Magazine / The UNIGE newsletter - [www.unige.ch/communication](http://www.unige.ch/communication)

### Science Libraries

<https://www.unige.ch/biblio/en/infos/locations/sciences/>

### Collectif La Datcha

<http://www.unige.ch/asso-etud/datcha/>

## Psychological benefits

The psychologists of the "Pôle Santé Social" will provide you with listening and support in complete confidentiality. They will evaluate, with you, your situation. They will be able to offer you immediate solutions or direct you to the most appropriate services or treatments in Geneva to answer your problem.

T 022 379 77 79 - [psychological@unige.ch](mailto:psychological@unige.ch)

[www.unige.ch/dife/sante-social/psychologique/](http://www.unige.ch/dife/sante-social/psychologique/)

Address: rue de Candolle 4, 1204 Geneva 4; 3rd floor

## To reach your goal

### Coaching service

Coaching service for pre-doc students from the Faculty of Science (French / English).

T 022 379 66 51 - [coach-sciences@unige.ch](mailto:coach-sciences@unige.ch) - [www.unige.ch/sciences/coaching](http://www.unige.ch/sciences/coaching)

Address: quai Ernest-Ansermet 30, 1211 Geneva 4





## **Physical health**

### **Sports Office**

More than 60 individual or team sports activities; tournaments and competitions

T 022 379 77 22 - E 022 379 11 09 - [sports@unige.ch](mailto:sports@unige.ch) - [www.unige.ch/dife/sports](http://www.unige.ch/dife/sports)

Address: rue de Candolle 4, 1205 Geneva, 4th floor

Schedule: Monday to Friday, 10 am to 1 pm and 2 pm to 4 pm

### **University restaurants**

Menus from CHF 8.90 to 10.00 on presentation of the student card

[www.unige.ch/batiment/service-batiments/logements/restaurants/](http://www.unige.ch/batiment/service-batiments/logements/restaurants/)

Schedule: Sciences II Monday to Friday from 7:00 am to 5:15 pm

Uni Mail Monday to Friday from 7.30am to 5.30pm

Battelle Monday to Friday from 7:30 to 16:00

### **Health benefits**

The Pôle Santé Social offers confidential and free professional health services for all students.

T 022 379 77 79 - [www.unige.ch/dife/sante-social/sante/](http://www.unige.ch/dife/sante-social/sante/)

Address: rue de Candolle 4, 1204 Geneva 4, 3rd floor

## AND AFTER THAT?

### **For a serene professional future**

#### **Career Center**

T 022 379 77 02 - [carriere@unige.ch](mailto:carriere@unige.ch) - [www.unige.ch/dife/carriere/](http://www.unige.ch/dife/carriere/)

Address: rue de Candolle 4, 1211 Geneva 4, 2nd floor

Schedule: Monday to Friday 9h to 13h

#### **myScience Career Days**

[carriere@unige.ch](mailto:carriere@unige.ch) – [www.unige.ch/dife/carriere/forums/](http://www.unige.ch/dife/carriere/forums/)

### **To create a network**

#### **Alumni**

"Alumni UNIGE" is the Graduate Association of the University of Geneva.

[alumni@unige.ch](mailto:alumni@unige.ch) - <https://alumniunige.ch/>

## STRUCTURE OF THE TEACHING PERSONEL

### PROFESSORS

**Professor ordinaire (PO)**

teaching + research+ direction

**Professor associé (PAS)**

teaching + research+ management

**Professor titulaire (PT)**

teaching + research  
main activity outside the University

**Professor titulaire "ancienne loi" (PTI)**

teaching + research

**Professor assistant (PAST)**

teaching + research

**Professor invité (PI)**

teaching + research  
maximum stay one year

### RESEARCH AND TEACHING COLLABORATORS

**Maître d'enseignement et de recherche (MER)**

teaching + research

**Chargé de cours (CC)**

engaged for particular teaching  
part time

**Privat-docent (PD)**

teaching, unpaid  
part time

**Chargé d'enseignement (CE)**

teaching + research in some cases

**Conseiller aux études (CET)**

student counseling

**Collaborateur scientifique (COLS) I et II**

research

**Maître-assistant (MA)**

teaching + research  
PhD with experience in research

**Post-doctorant (PDOC)**

assisting students + research  
PhD

**Assistant (AS) A1 et A2**

assisting students + research  
Ongoing PhD study

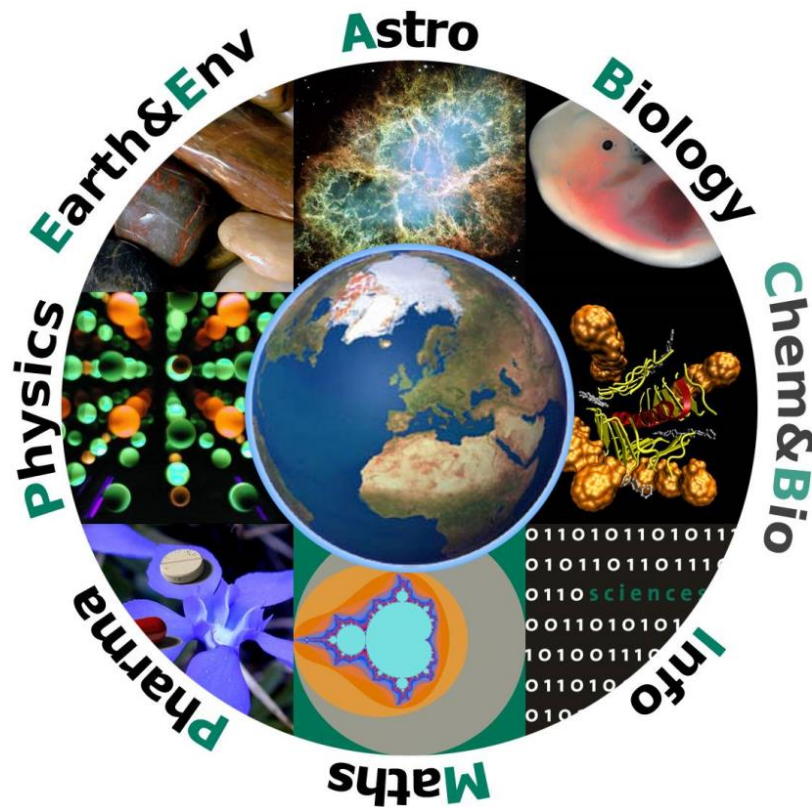
**Auxiliaire de recherche et d'enseignement (ARE)**

part time assistant  
student in training

N.B. the official titles are listed in French and intentionally not translated



# Studying Astrophysics



**UNIVERSITÉ  
DE GENÈVE**

**FACULTY OF SCIENCE**  
Department of Astronomy

## Department of Astronomy

**The Department of Astronomy of the University of Geneva  
is located on two sites in and outside Versoix**



**The main site is the Geneva Observatory at Sauverny/Versoix**, which also hosts the Laboratory of Astrophysics of the EPFL.

**The second site is located at Ecogia/Versoix**, hosting the ISDC (Integral Science Data Centre), and a large activity related to space missions and ground-based projects.



The Department of Astronomy of the University of Geneva is located on two sites of the town of Versoix. The main site is the Geneva Observatory at Sauverny/Versoix, which also hosts the Laboratory of Astrophysics of the EPFL. The second site is located at Ecogia/Versoix, hosting the ISDC (Integral Science Data Center), CDCI (Common Data Centre Infrastructure), and space and ground-segment activities (Euclid, Gaia, CTA, etc).

About 140 persons are employed on the two sites of Sauverny and Ecogia, including scientists, post-doctoral researchers, PhD candidates, technical staff (computer and electronics specialists, mechanics, etc.), and administrative staff.

The Department of Astronomy manages one permanent astronomical observation station: a 1.2 m telescope on the site of La Silla (ESO, Chile). Astronomers actively participate as well to large consortia of other telescopes: at St-Michel (Observatory of Haute Provence, OHP, France), La Palma (Canary Islands, Spain), etc. Our astronomers also benefit from access to exceptional instruments made available as part of the Swiss participation in the ESO European Southern Observatory. In November 2018 we have inaugurated Telesto, our new telescope for Science, Teaching and Outreach placed in the AstroDome on the site of Sauverny.



ESO site, La Silla, Chile



Observatoire Haute-Provence, France



La Palma Canary Islands, Spain

## Overview of the Research Groups and Projects

Research in the Department of Astronomy is grouped in four main themes: Exoplanetary systems, Stars formation & evolution, Galaxies & Universe, Extreme Universe. It is based on and combines different approaches, including observations covering the entire electromagnetic spectrum (using ground-based and space-borne telescopes), theoretical work, simulations, modelling, data analysis, and instrumentation.

The Department is involved in numerous national and international projects for the exploitation and construction of new instruments and satellites, for data analysis, observational surveys, and a wide diversity of other international collaborations.

See the Department webpages for an overview of the main activities of the research groups (<https://www.unige.ch/sciences/astro/en/research/>) and projects (<https://www.unige.ch/sciences/astro/en/projects>).

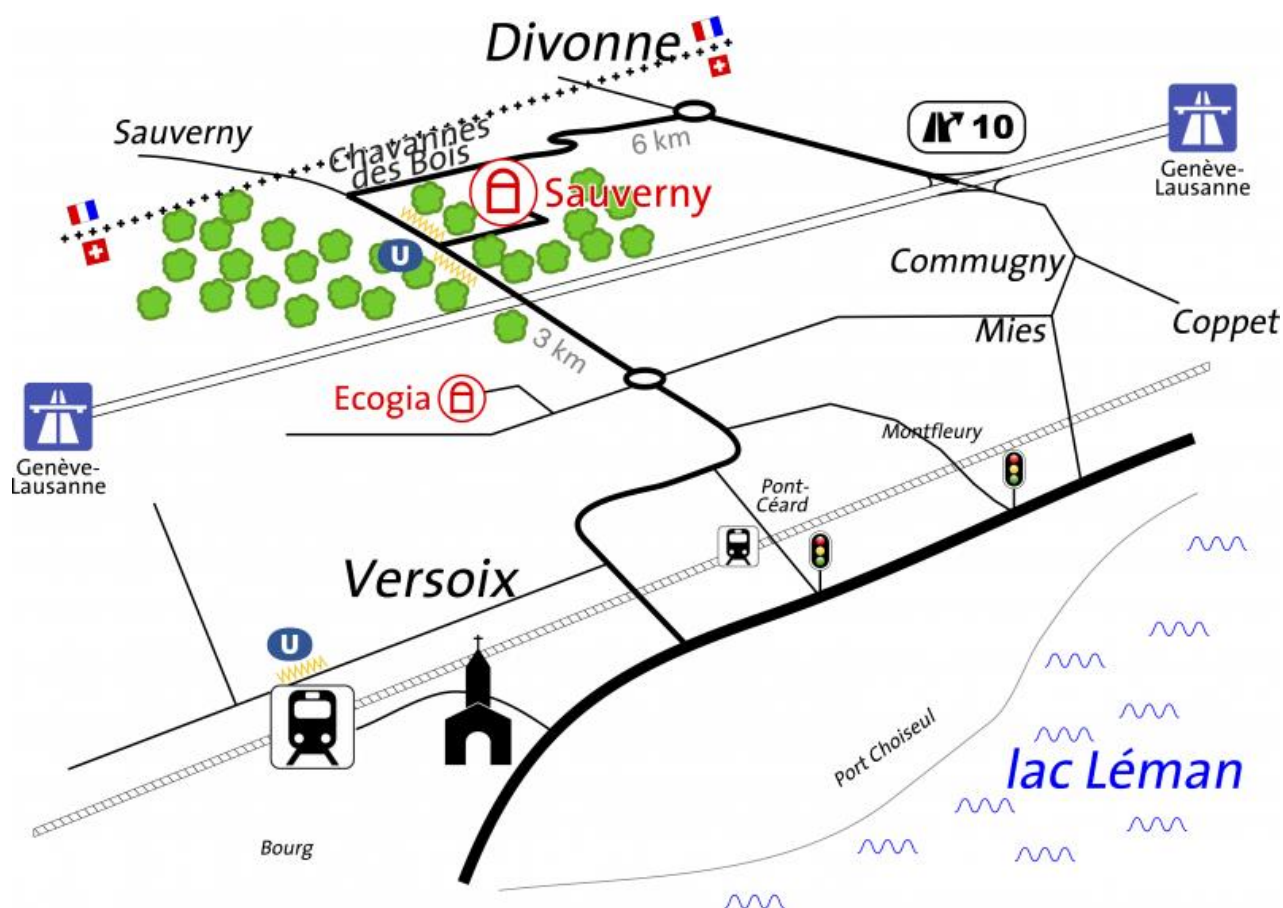
- **Exoplanetary systems**  
Prof. Francesco PEPE  
Prof. Stéphane UDRY  
Prof. Didier QUELOZ  
Prof. Emeline BOLMONT  
Prof. François BOUCHY  
Prof. David EHRENREICH  
Prof. Xavier DUMUSQUE  
Dr Christophe LOVIS  
Dr Damien SÉGRANSAN
- **Stars formation & Evolution**  
Prof. Georges MEYNET  
Prof. Corinne CHARBONNEL  
Prof. Tassos FRAGKOS  
Dr Marc AUDARD  
Dr Laurent EYER  
Dr Patrick EGGENBERGER
- **Galaxies & Universe**  
Prof. Daniel SCHÄERER  
Prof. Pascal OESCH  
Prof. Anne VERHAMME  
Dr Miroslava DESSAUGES  
Dr Annalisa DE CIA
- **Extreme Universe**  
Prof. Stéphane PALTANI  
Dr Andrii NERONOV  
Dr Roland WALTER



## Quick facts

- Telephone number of the reception of the Department:  
+41 (0) 22 379 22 00 (Sauverny)  
+41 (0) 22 379 21 00 (Ecogia)  
during office hours, from Monday to Friday (08:00 am - 12:00 / 13:00 pm - 17:15)
- Web address: <https://www.unige.ch/sciences/astro/en/>
- Postal address Sauverny site:  
Département d'astronomie de l'Université de Genève,  
chemin des Maillettes 51, CH-1290 Versoix, Switzerland
- Postal address Ecogia site:  
Département d'astronomie de l'Université de Genève  
chemin d'Ecogia 16, CH-1290 Versoix, Switzerland

## Location of the Sauverny and Ecogia sites of the Department



## How to get there (Observatory shuttle, TPG bus, taxi, private transportation)

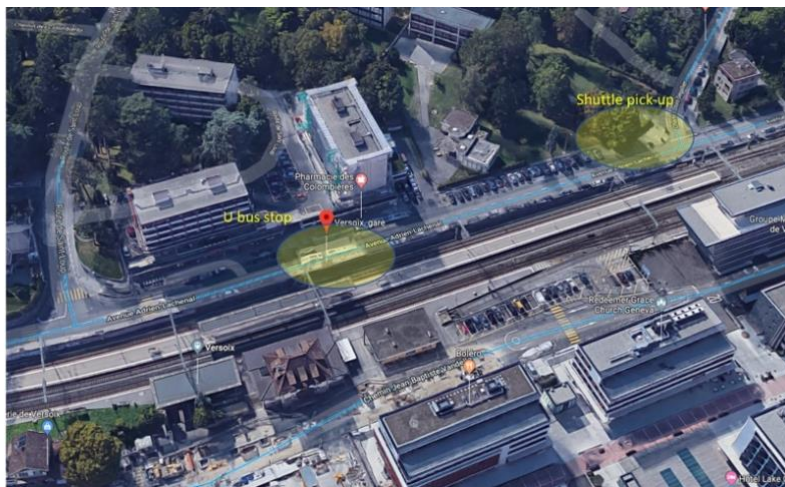
Location **map** (both sites):

<https://www.unige.ch/sciences/astro/en/contacts/contact-observatoire/>

There is a public transportation, trains and buses to reach the institute of Sauverny located in the woods(!)

**Observatory shuttle:** capacity of 13 passengers; two morning transfers to the Observatory, one from Coppet Station at 08:05\* and one at the crossroads of the chemin des Maillettes and the Route de Sauverny, in front of the TPG bus stop “Versoix, Observatoire de Genève” at 08:27\* and two afternoon transfers from the Observatory at 17:05\* to Chavannes-des-Bois and at 17:25\* to Versoix Station.

*\*Current schedule. Any change will be immediately announced by email to all the collaborators of the Department.*



**55 bus stop and pick up location** of the Observatory shuttle on the West side (opposite of lake-side) of the Versoix train

**Using public transport TPG:** The «Tout Genève» (all Geneva) ticket entitles you to use all the TPG lines (regional train CFF, tram, trolleybus, bus and even “Mouettes” (ferry boats) for one hour (60 minutes) from the time of purchase. The whole system uses the same tickets <https://www.tpg.ch>

From Cornavin main train station (center of Geneva city):

Platform 1 regional train: Geneva – Versoix Station  
every 15 minutes during day time.

From Versoix station take the Bus “55” direction “Chavannes”:

- Bus stop “Ecogia”; then 5 minutes ‘walk to join the Ecogia site.
- Bus stop “Observatoire”; then 10 minutes ‘walk to join the site of Sauverny.

For the Ecogia site only: from Versoix there is also Bus “50” towards “Versoix-Centre sportif”:

- Bus stop “Ecogia”; then 5 minutes ‘walk to join the institute of Ecogia.

For more information consult <https://www.tpg.ch>

**By Taxi:** in Versoix area: “Taxi Tooblu” +41 (0) 79 22 44 55 4

**By private transport:** there are parking places for cars, motorcycles, bicycles, at both Sauverny and Ecogia sites.

## Internal organisation of the Department

**Cafeteria:** The cafeteria of the Observatory is located at the ground floor of the main building of the Sauverny site.

Opening hours: Monday to Friday from 09:30 to 13:00  
Lunch meals are served from 12:00 to 13:00

You may choose between either 2 meals of the day, one traditional and in principle one vegetarian, or various salads. You will have to register the same morning on the provided list at the reception. Different snacks can be taken at your own discretion during the all day by noting your due in a folder and pay your credit the following mornings during opening hours. There are also microwaves available to warm your own dishes.

**Library:** most journals you would need are available online and the bookshelves are well stocked. You may also ask your demands to [Mathieu.Puttalaz@unige.ch](mailto:Mathieu.Puttalaz@unige.ch) our librarian. Workings days: Mondays, Tuesdays (every 2 weeks) and Thursdays.  
<https://www.unige.ch/sciences/astro/en/services/library/>

## Good to know: What to do in an emergency? Important emergency numbers at a glance

EMERGENCY phone numbers in Switzerland are:

	<a href="#"><u>118 Fire brigade, alarm centre</u></a>
	<a href="#"><u>117 Police</u></a>
	<a href="#"><u>144 Ambulances, cardio mobile and doctors</u></a>
	<a href="#"><u>145 Toxicity</u></a>
	<a href="#"><u>112 International emergency number (Police)</u></a>

These numbers are to be used in an emergency only

EMERGENCY numbers Sauverny and Ecogia sites:

[Sauverny site : Reception \(Day time\) Phone number direct N°: +41 \(0\)22 379 22 00](#)

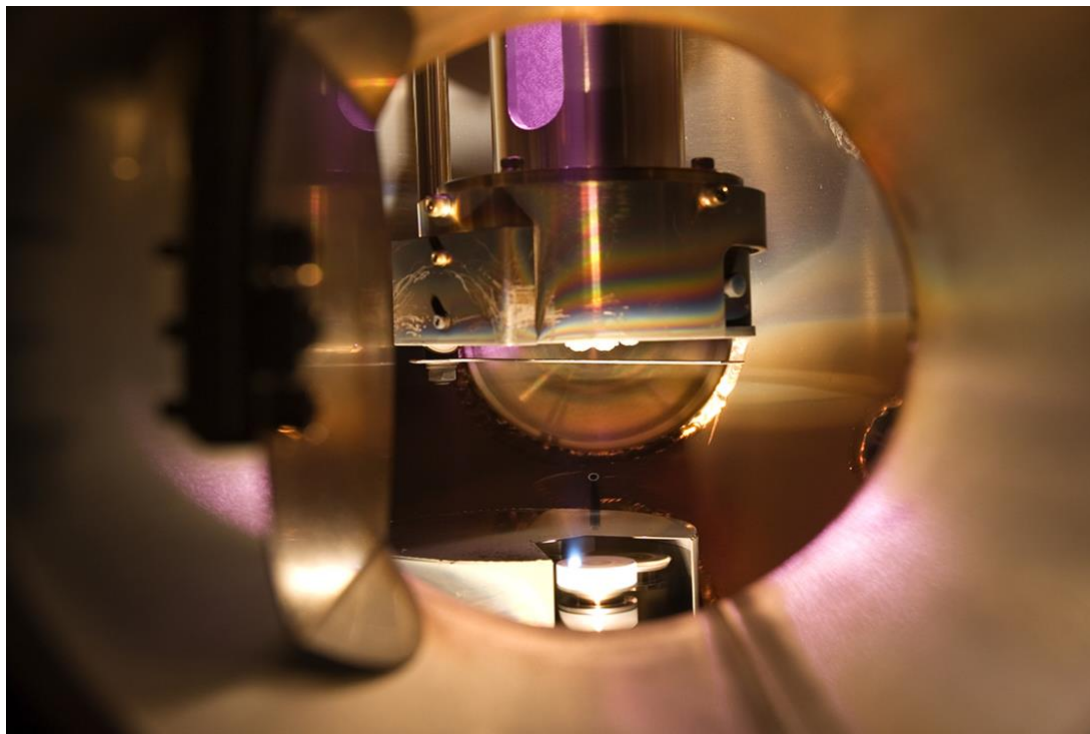
[Ecogia site : Reception \(Day time\) Phone number direct N°: +41 \(0\)22 379 21 00](#)

[Guardian of the Sauverny site /H24/D7: Mrs Jilda Veraguth mobile phone: +41 \(0\) 79 955 83 22](#)

## BACHELOR IN PHYSICS

The Bachelor in Physics includes an introduction to Astrophysics. It is primarily taught in French. For more information consult

<https://www.unige.ch/sciences/fr/enseignements/formations/bachelors/physique/>



### DURÉE DES ETUDES

3 ans (6 semestres)

### LANGUE D'ENSEIGNEMENT

**Français**

Bonne connaissance de l'anglais recommandée.

### CONDITIONS D'IMMATRICULATION

[www.unige.ch/conditions/BA](http://www.unige.ch/conditions/BA)

*Baccalauréat universitaire / Bachelor*

## LE BACHELOR EN PHYSIQUE

permet d'acquérir une solide formation dans les domaines de la mécanique classique et quantique, de l'électrodynamique, de la thermodynamique et de la mécanique statistique. Il propose également une introduction à la physique du solide, à l'astronomie et l'astrophysique, à la physique appliquée ainsi qu'à la physique des particules. Font également partie de la formation l'acquisition et le développement des outils mathématiques et informatiques utilisés en physique et dans les sciences naturelles en général. L'obtention du bachelor permet l'accès aux Masters en physique, astrophysique et bi-disciplinaire en sciences.

## PROGRAMME D'ÉTUDES

6 semestres (max. 10 semestres) | 180 crédits ECTS

### Enseignements 1<sup>re</sup> année

60 crédits

Cours obligatoires et travaux pratiques:

- Mécanique
- Electrodynamique
- Mathématiques
- Informatique, etc.

### Enseignements 2<sup>e</sup> année

60 crédits

Cours obligatoires et travaux pratiques:

- Mécanique
- Electrodynamique
- Mécanique quantique
- Mathématiques
- Thermodynamique, etc.

### Enseignements 3<sup>e</sup> année

60 crédits

Cours obligatoires, cours à option et travaux pratiques:

- Mécanique quantique
- Mécanique statistique
- Astrophysique générale
- Particules et noyaux
- Physique du solide, etc.

## CALENDRIER ACADÉMIQUE

[www.unige.ch/calendrier](http://www.unige.ch/calendrier)

## MOBILITÉ

Départ possible pour une université suisse ou étrangère dès l'obtention de 60 crédits. Le règlement permet d'obtenir jusqu'à 60 crédits du bachelor à l'extérieur de la Faculté. Selon les sections, on conseille aux étudiant-e-s d'effectuer leur programme de mobilité soit en 2<sup>e</sup> année, soit en 3<sup>e</sup> année de bachelor, pour une durée de 2 semestres.

Pour toutes les destinations, l'étudiant-e doit s'assurer que les examens passés dans l'université d'accueil sont reconnus comme équivalents par la Faculté des sciences.

[www.unige.ch/exchange](http://www.unige.ch/exchange)

## DÉBOUCHÉS ACADÉMIQUES

- Master en physique
- Master en astrophysique
- Master en sciences de l'environnement | Admission sur dossier
- Master interdisciplinaire en neurosciences | Admission sur dossier
- Master bi-disciplinaire en sciences
- Master en biologie chimique

## TAXES UNIVERSITAIRES

CHF 500.- par semestre

## INSCRIPTION

Délai d'inscription: 30 avril 2020  
(28 février 2020 pour les candidat-e-s soumis-es, d'après leur nationalité, à un visa selon les prescriptions de la Confédération)

[www.unige.ch/admissions](http://www.unige.ch/admissions)

## CONTACTS RELATIFS AUX ÉTUDES

### FACULTÉ DES SCIENCES

Sciences II  
30 quai Ernest-Ansermet  
1211 Genève 4

### SECRÉTARIAT DES ÉTUDIANT-E-S

T. +41 (0)22 379 66 62  
[secretariat-etudiants-sciences@unige.ch](mailto:secretariat-etudiants-sciences@unige.ch)

### CONSEILLER AUX ÉTUDES

Xavier Chillier  
T. +41 (0)22 379 67 15  
[conseiller-etudes-sciences@unige.ch](mailto:conseiller-etudes-sciences@unige.ch)

### SECTION DE PHYSIQUE

Xin Wu  
T. +41 (0)22 379 62 72  
[Xin.Wu@unige.ch](mailto:Xin.Wu@unige.ch)

[www.unige.ch/sciences](http://www.unige.ch/sciences)



# MASTER IN ASTROPHYSICS



## DURATION OF STUDIES

2 years (4 semesters)

## LANGUAGE OF INSTRUCTION

English

## CONDITIONS OF REGISTRATION

[www.unige.ch/conditions/MA](http://www.unige.ch/conditions/MA)

## ADMISSION CONDITIONS

A Bachelor in Physics, or an equivalent degree.

## *Master's Programme*

## THE MASTER IN ASTROPHYSICS

provides advanced training in astrophysics with an emphasis on exo-planetology, stellar and extra-galactic physics, ground- and space-based instrumentation, and concepts and tools of modern data science. It includes common courses and a specialisation in one of the above domains. The programme and dissertation work take place in a renowned research institute (the Department of Astronomy of the University, also known as the "Geneva Observatory"), offering direct contacts with the local research groups and with international collaborations which use and contribute to state-of-the-art facilities of the field (ESO, ESA, NASA, and others).

Through the programme, students acquire both a solid foundation in modern astrophysics and expertise in their field of specialisation. The programme leads to careers in areas such as research, teaching and industry, and develops valuable skills for future.

### AVAILABLE ORIENTATIONS

- Exoplanetology
- From stars to the Universe
- Instrumentation and data analysis

[www.unige.ch/sciences/astro/en/education](http://www.unige.ch/sciences/astro/en/education)

FACULTY OF SCIENCE



UNIVERSITÉ  
DE GENÈVE

## STUDY PROGRAMME

4 semesters (max. 8 semesters) | 120 ECTS credits

**Specialisation courses and electives, seminars, course work**  
60 credits

### Dissertation

60 credits

#### PLANET S

*Origin, evolution and characterisation of planets in the solar system and beyond. Since the discovery of exo-planets by the UNIGE back in 1995, planetology now not only focuses on discovery, but on the physical and chemical characterisation of these new worlds. In this context the activities of PlanetS concern three main themes: the origin, evolution, and characterization of planets and planetary systems as a whole. Ultimately, PlanetS lays the foundations of a Swiss Institute of Planetary Sciences that will carry on these activities beyond the lifetime of the National Centre of Competence in Research.*

[nccr-planets.ch](http://nccr-planets.ch)

## ACADEMIC CALENDAR

[www.unige.ch/calendar](http://www.unige.ch/calendar)

## LEVEL OF FRENCH REQUIRED BY UNIGE

**No French proficiency test required for non-Francophones.**

## MOBILITY

Students may conduct research outside the university, under the supervision of a faculty member, or do a work placement at a leading external laboratory in order to complete their Master's degree.

[unige.ch/exchange](http://unige.ch/exchange)

## PROFESSIONAL PROSPECTS

The Master in Astrophysics leads to a number of opportunities both in Switzerland and abroad, including:

- Research
- Data Science
- International organisations (ESA, ESO)
- Industry
- Teaching
- Communication and science outreach

## UNIVERSITY TAXES

500 CHF / semester

## REGISTRATION

**Deadline: 30 April 2020**

(28 February 2020 for applicants subject to a visa because of their nationality, as set forth in Swiss federal regulations)

[unige.ch/enrolment](http://unige.ch/enrolment)

## CONTACTS FOR STUDIES

### FACULTY OF SCIENCE

Sciences II  
30 quai Ernest-Ansermet  
1211 Genève 4

### STUDENT AFFAIRS

T. +41 (0)22 379 66 61/62/63  
[secretariat-etudiants-sciences@unige.ch](mailto:secretariat-etudiants-sciences@unige.ch)

### ACADEMIC ADVISOR

Xavier Chillier  
T. +41 (0)22 379 67 15  
[conseiller-etudes-sciences@unige.ch](mailto:conseiller-etudes-sciences@unige.ch)

### DEPARTMENT OF ASTRONOMY

Daniel Schaerer  
T. +41(0)22 379 24 54  
[Daniel.Schaerer@unige.ch](mailto:Daniel.Schaerer@unige.ch)  
[astro-master@unige.ch](mailto:astro-master@unige.ch)

[www.unige.ch/sciences](http://www.unige.ch/sciences)

All programs are subject to changes. Please consult the program regulations.

The up-to-date webpage of the Master programme is here  
<https://www.unige.ch/sciences/astro/en/education/master-in-astrophysics/>

## ORGANISATION OF THE MASTER IN ASTROPHYSICS

### **Director of the Master programme & Student counsellor**

Prof. Daniel SCHAEERER  
Dept. of Astronomy, Sauverny site, office 463  
T 022 379 24 54 – [Daniel.Schaerer@unige.ch](mailto:Daniel.Schaerer@unige.ch)  
[astro-master@unige.ch](mailto:astro-master@unige.ch)

### **Programme coordinator**

Prof. François BOUCHY  
Dept. of Astronomy, Sauverny site, office 1414  
T 022 379 24 60 – [Francois.Bouchy@unige.ch](mailto:Francois.Bouchy@unige.ch)

### **Programme secretary**

Chantal TACOY  
Dept. of Astronomy, Sauverny site, office 320  
Office hours Monday-Friday 8:30-12, 13-17:15  
T 022 379 23 92 – [Chantal.Tacoy@unige.ch](mailto:Chantal.Tacoy@unige.ch)

### **Student Secretariat**

The [student secretariat of the Faculty](#) is located in central Geneva, on the ground floor of building Sciences III, office 0003. It is open every morning from 9.30 am to 12 noon and on Tuesdays and Thursdays from 2 pm to 4 pm. The secretariat manages student files, receives examinations, sets examination schedules, submits diploma request and change of address forms, issues test reports after examinations etc.

T 022 379 66 61/62/63 - F 022 379 67 16 - [Secretariat-Etudents-sciences@unige.ch](mailto:Secretariat-Etudents-sciences@unige.ch)  
<https://www.unige.ch/sciences/en/espaceetudiant/secretariatetudiants/>



# PROGRAMME OF THE MASTER IN ASTROPHYSICS

## About the Programme

The Master in Astrophysics is a 2-year research- and technique-oriented Master (120 ECTS) with the following structure.

**Semester 1** (30 ECTS): Mandatory and Elective courses common to all specialisations

**Semester 2** (30 ECTS): Courses from one specialisation among:

- Exoplanetology
- From stars to the Universe
- Instrumentation and data analysis

**Semesters 3 & 4** (60 ECTS):

- Major research project (Master thesis)
- Astrophysics Colloquium

The detailed list of the course is available here, and on the following pages  
<https://www.unige.ch/sciences/astro/en/education/master-in-astrophysics/program/>

The regulations (legal text in French) of the Master Programme is found here  
<https://www.unige.ch/sciences/astro/files/5715/9464/9338/surSite-B12-juin2020.pdf>

## COMMON PROGRAMME (ALL SPECIALISATIONS – SEMESTER 1)

**Semester 1 (autumn): 30 ECTS**

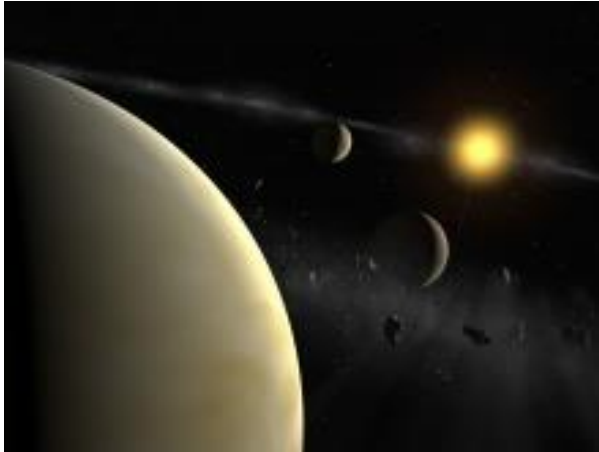
**Mandatory:**

- Physical processes in astrophysics (microscopic) (2h, 3.5 ECTS)  
- *Prof. G. Meynet*
- Physical processes in astrophysics (macroscopic) (2h, 3.5 ECTS)  
- *Prof. A. Fragkos*
- Star and planets – an introduction (2h, 3.5 ECTS)  
- *Prof. C. Charbonnel / Prof. E. Bolmont*
- Galaxies and cosmology – an introduction (2h, 3.5 ECTS)  
- *Prof. D. Schaerer / Prof. P. Oesch*
- Astronomical observables and observations (2h, 3.5 ECTS) - *Prof. S. Paltani*
- Astrophysics & Data Science (2h + 1h, 5 ECTS) - *Dr. D. Ségransan*
- Astrophysics Lab I (7.5 ECTS) - *Dr. M. Audard*

**Elective:**

- Astrophysics Colloquium - *Prof. P. Oesch / Prof. A. Fragkos*

## SPECIALISATION EXOPLANETOLOGY (SEMESTER 2)



**Semester 2 (spring): 30 ECTS**

### **Mandatory:**

- Dynamics of planetary systems (2h+0.5h, 4.5 ECTS)  
- *Prof. S. Udry / Prof. E. Bolmont*
- Planet formation and evolution (2h+0.5h, 4.5 ECTS)  
- *Prof. F. Bouchy / Prof. S. Udry*
- Detection and characterisation techniques (2h+0.5h, 4.5 ECTS) - *Prof. F. Bouchy*
- Planetary atmospheres (2h+0.5h, 4.5 ECTS)  
- *Prof. D. Ehrenreich / Prof. E. Bolmont*
- Astrophysics Lab II (7.5 ECTS) – *Dr. M. Audard*

### **Elective:**

- Course(s) from other specialisations or other courses
- Astrophysics Colloquium - *Prof. P. Oesch / Prof. A. Fragkos*

### **Other Courses**

- Particles in the Universe (3.5 ECTS) - *Prof. T. Montaruli*
- Cosmology II (8 ECTS) - *Prof. C. Bonvin*

Other courses can be chosen from the offer of the Faculty of Sciences, in agreement with the Coordinator of the Master.

## SPECIALISATION FROM STARS TO THE UNIVERSE (SEMESTER 2)



**Semester 2 (spring): 30 ECTS**

**Mandatory: 4 out of 5 courses from this list + Astrophysics Lab II**

- Stellar structure and evolution (2h+0.5h, 4.5 ECTS) - *Prof. G. Meynet*
- Galaxies and cosmology II - Galaxy evolution in a cosmological context (2h+0.5h, 4.5 ECTS) - *Prof. P. Oesch, Dr. N. Produit*
- High energy astrophysics (2h+0.5h, 4.5 ECTS) - *Dr. R. Walter*
- From stars to galaxies: spectroscopic diagnostics in astrophysics (2h+0.5h, 4.5 ECTS) - *Prof. D. Schaerer*
- From interstellar medium to stars: the diffuse media and its link to star formation (2h+0.5h, 4.5 ECTS) - *Dr. M. Audard / Prof. A. Verhamme*
- From stars to the Universe: exercices (2h+0.5h, 4.5 ECTS, 0 ECTS)
- Astrophysics Lab II (7.5 ECTS) - *Dr. M. Audard*

**Elective (other courses):**

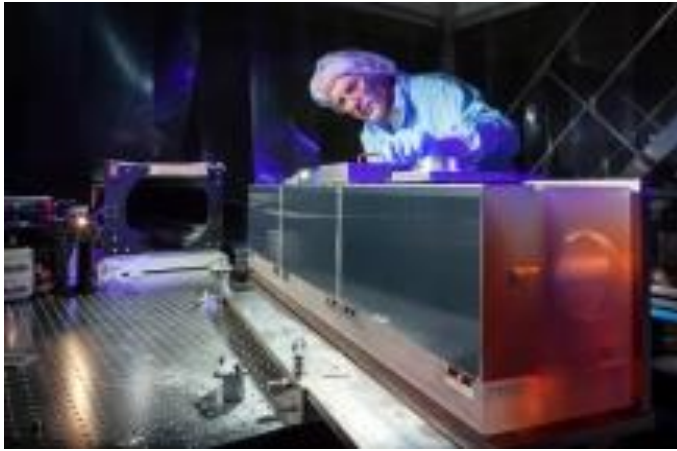
- Course(s) from other specialisations or other courses
- Astrophysics Colloquium - *Prof. P. Oesch / Prof. A. Fragkos*

**Other Courses**

- Particles in the Universe (3.5 ECTS) - *Prof. T. Montaruli*
- Cosmology (8 ECTS) - *Prof. C. Bonvin*

Other courses can be chosen from the offer of the Faculty of Sciences, in agreement with the Coordinator of the Master.

## SPECIALISATION INSTRUMENTATION AND DATA ANALYSIS (SEMESTER 2)



**Semester 2 (spring): 30 ECTS**

### **Mandatory:**

- Observational techniques (2h, 3.5 ECTS) - *Prof. F. Pepe*
- Optics for astronomy (2h, 3.5 ECTS)  
- *Dr. B. Chazelas, Dr. N. Blind, Dr. D. Eckert*
- Detectors in astrophysics (2h, 3.5 ECTS) - *Dr. F. Wildi*
- Observations, data acquisition, data analysis (2h + 2h, 7.5 ECTS) - *Dr. C. Lovis*
- Astrophysics Lab II (7.5 ECTS) – *Dr. M. Audard*

### **Elective:**

- Course(s) from other specialisations or other courses
- Astrophysics Colloquium - *Prof. P. Oesch / Prof. A. Fragkos*

### **Other Courses**

- Particles in the Universe (3.5 ECTS) - *Prof. T. Montaruli*
- Cosmology (8 ECTS) - *Prof. C. Bonvin*

Other courses can be chosen from the offer of the Faculty of Sciences, in agreement with the Coordinator of the Master.

## ALL SPECIALISATIONS – SEMESTERS 3 & 4

### Semester 3 (autumn) & 4 (spring): 60 ETCS

- Major research project (Master thesis, 60 ECTS)
- Astrophysics Colloquium - *Prof. P. Oesch / Prof. A. Fragkos*

## COURSE SCHEDULE

**Master in Astrophysics** (Department of Astronomy, University of Geneva)  
Complete schedule for the **fall semester** – 14 September – 18 December 2020

Monday	Tuesday	Wednesday	Thursday	Friday
8h45 - 17h30 M. Audard Astrophysics Lab I	8h45 - 10h30 S. Paltani Astronomical observables and observations  10h30 - 11h00 Science coffee 11h00 - 12h00 Astrophysics Colloquium UniGE-EPFL	8h45 - 10h30 T. Fragkos Physical processes in astrophysics (macroscopic)	10h15 - 12h00 D. Schaerer/ P. Oesch Galaxies and cosmology - an introduction	
	13h30 - 16h00 D. Segransan Astrophysics and data science (course + exercises)	13h15 - 15h00 C. Charbonnel / E. Bolmont Stars and planets - an introduction	14h15 - 16h00 G. Meynet Physical processes in astrophysics (microscopic)	

V4-20200701/ds/ct

Courses in room 263 (ground-floor), Dept. of Astronomy, Versoix

**Master in Astrophysics** (Department of Astronomy, University of Geneva)  
Complete schedule for the **spring semester** – 22 February 2021 – 4 June 2021

Monday	Tuesday	Wednesday	Thursday	Friday
08h45 - 17h30 M. Audard Astrophysics Lab II	08h45 - 10h30 G. Meynet Stellar Structure and Evolution  10h30 - 11h00 Science coffee 11h00 - 12h00 Astrophysics Colloquium UniGE-EPFL	08h45 - 10h30 F. Wildi Detectors in astrophysics  10h45 - 12h30 D. Schaerer From stars to galaxies: Spectroscopic diagnostics in astrophysics	08h45 - 10h30 S. Udry / E. Bolmont Dynamics of Planetary Systems  10h45 - 12h30 B. Chazelas Optics for astronomy	08h45 - 10h30 all Exoplanetology Exercises  10h45 - 12h30 R. Walter High energy astrophysics
	13h15 - 15h00 M. Audard / A. Verhamme Diffuse Media, Star Formation  15h15 - 17h00 F. Bouchy / S. Udry Planet formation and evolution	13h15 - 15h00 P. Oesch Galaxies and cosmology II – Galaxy evolution in a cosmological context  15h15 - 17h00 F. Pepe Observational techniques  15h15 - 17h00 all Stars to Universe: Exercises	13h15 - 15h00 D. Ehrenreich / E. Bolmont Planetary atmospheres  15h15 - 17h00 F. Bouchy Detection and characterisation techniques	13h15 - 15h00 C. Lovis Observation, data acquisition, data analysis (course + exercises)  15h15 - 17h00 C. Lovis Observation, data acquisition, data analysis (course + exercises)

2020701/ds/ct

Courses in room 263 (ground-floor)

Specialisations : [Exoplanetology](#) / [From Stars to the Universe](#) / [Instrumentation and Data Analysis](#)

## COURSE LIST AND DESCRIPTIONS

For a detailed online description of each course please follow the links given in the document.

### MASTER IN ASTROPHYSICS

#### Semester 1 - Common Courses

##### Mandatory

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	ECTS credits
14A030	<a href="#">Physical processes in astrophysics (microscopic)</a>	S	CR 2h A THU 14h15 - 16h00, Obs room 263	3,5
14A031	<a href="#">Physical processes in astrophysics (macroscopic)</a>	S	CR 2h A WED 8h45-10h30, Obs room 263	3,5
14A032	<a href="#">Star and planets - an introduction</a>	S	CR 2h A WED 13h15-15h00, Obs room 263	3,5
14A033	<a href="#">Galaxies and cosmology - an introduction</a>	S	CR 2h A THU 10h15-12h00, Obs room 263	3,5
14A034	<a href="#">Astronomical observables and observations</a>	S	CR 2h A TUE 08h45-10h30, Obs room 263	3,5
14A035	<a href="#">Astrophysics and Data Science</a>	S	CX 2h A TUE 13h30-16h00, Obs room 263	5
14A900	<a href="#">Astrophysics Lab I</a>	S	TP 8h A MON 08h45-17h30, Obs	7,5

##### Elective

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	ECTS credits
14A730	<a href="#">Astrophysics colloquium</a>	S	SE 1h AN TUE 11h00-12h00, Obs Aula	
10A001	<a href="#">Cours d'astronomie générale ouvert au public</a> <a href="#">Les grandes missions spatiales pour l'Astrophysique – Saison 1</a>	S	SE 1h A MA 17-19, SCII-A300	



## Semester 2 - Specialisation: Exoplanetology

### Mandatory

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	Nb crédits
14A040	<a href="#">Dynamics of planetary systems</a>	S	CX 2h P THU 08h45-10h30, Obs room 263	4,5
14A041	<a href="#">Planet formation and evolution</a>	S	CX 2h P TUE 15h15-17h00, Obs room 263	4,5
14A042	<a href="#">Detection and characterization techniques</a>	S	CR 2h P THU 15h15-17h00, Obs room 263	4,5
14A043	<a href="#">Planetary atmospheres</a>	S	CX 2h P THU 13h15-15h00, Obs room 263	4,5
14A044	<a href="#">Exoplanetology: exercices</a>	S	EX 2h P FRI 08h45-10h30, Obs room 263	0
14A901	<a href="#">Astrophysics Lab II</a>	S	TP 8h P MON 08h45-17h30, Obs	7,5

### Elective

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	Nb crédits
14A730	<a href="#">Astrophysics colloquium</a>	S	SE 1h AN TUE 11h00-12h00, Obs Aula	

### 2<sup>nd</sup> Year

*Major research project (60 ECTS)*

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	Nb crédits
14A730	<a href="#">Astrophysics colloquium</a>	S	SE 1h AN TUE 11h00-12h00, Obs Aula	

## Semester 2 - Specialisation: From stars to the Universe

**Mandatory: 4 out of 5 courses from this list + Astrophysics Lab II**

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	ECTS credits
14A050	<a href="#">Stellar structure and evolution</a>	S	CX 2h P TUE 08h45-10h30, Obs room 263	4,5
14A051	<a href="#">Galaxies and Cosmology II - Galaxy Evolution in a Cosmological Context</a>	S	CX 2h P WED 13h15-15h00, Obs room 263	4,5
14A052	<a href="#">High energy astrophysics</a>	S	CX 2h P FRI 10h45-12h30, Obs room 263	4,5
14A053	<a href="#">From stars to galaxies: spectroscopic diagnostics in astrophysics</a>	S	CX 2h P WED 10h45-12h30, Obs room 263	4,5
14A054	<a href="#">From interstellar medium to stars: diffuse media and their link to star formation</a>	S	CX 2h P TUE 13h15-15h00, Obs room 263	4,5
14A055	<a href="#">From stars to the Universe : exercices</a>	S	EX 2h P WED 15h15-17h00, Obs room 263	0
14A901	<a href="#">Astrophysics Lab II</a>	S	TP 8h P MON 08h45-17h30, Obs	7,5

## Elective

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	ECTS credits
14A730	<a href="#">Astrophysics colloquium</a>	S	SE 1h AN TUE 11h00-12h00, Obs Aula	

## Semester 2 – Specialisation: Instrumentation and Data Analysis

### Mandatory

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	ECTS credits
14A060	<a href="#">Observational techniques</a>	S	CR 2h P WED 15h15-17h00, Obs room 263	3,5
14A061	<a href="#">Optics for astronomy</a>	S	CR 2h P THU 10h45-12h30, Obs room 263	3,5
14A062	<a href="#">Detectors in astrophysics</a>	S	CR 2h P WED 08h45-10h30, Obs room 263	3,5
14A063	<a href="#">Observations, data acquisition, data analysis</a>	S	CX 4h P FRI 13h15-17h00, Obs room 263	7,5
14A901	<a href="#">Astrophysics Lab II</a>	S	TP 8h P MON 08h45-17h30, Obs	7,5

### Elective

Code	Name	Fac./ Ecole/ Inst.	Type/Semester	ECTS credits
14A730	<a href="#">Astrophysics colloquium</a>	S	SE 1h AN TUE 11h00-12h00, Obs Aula	

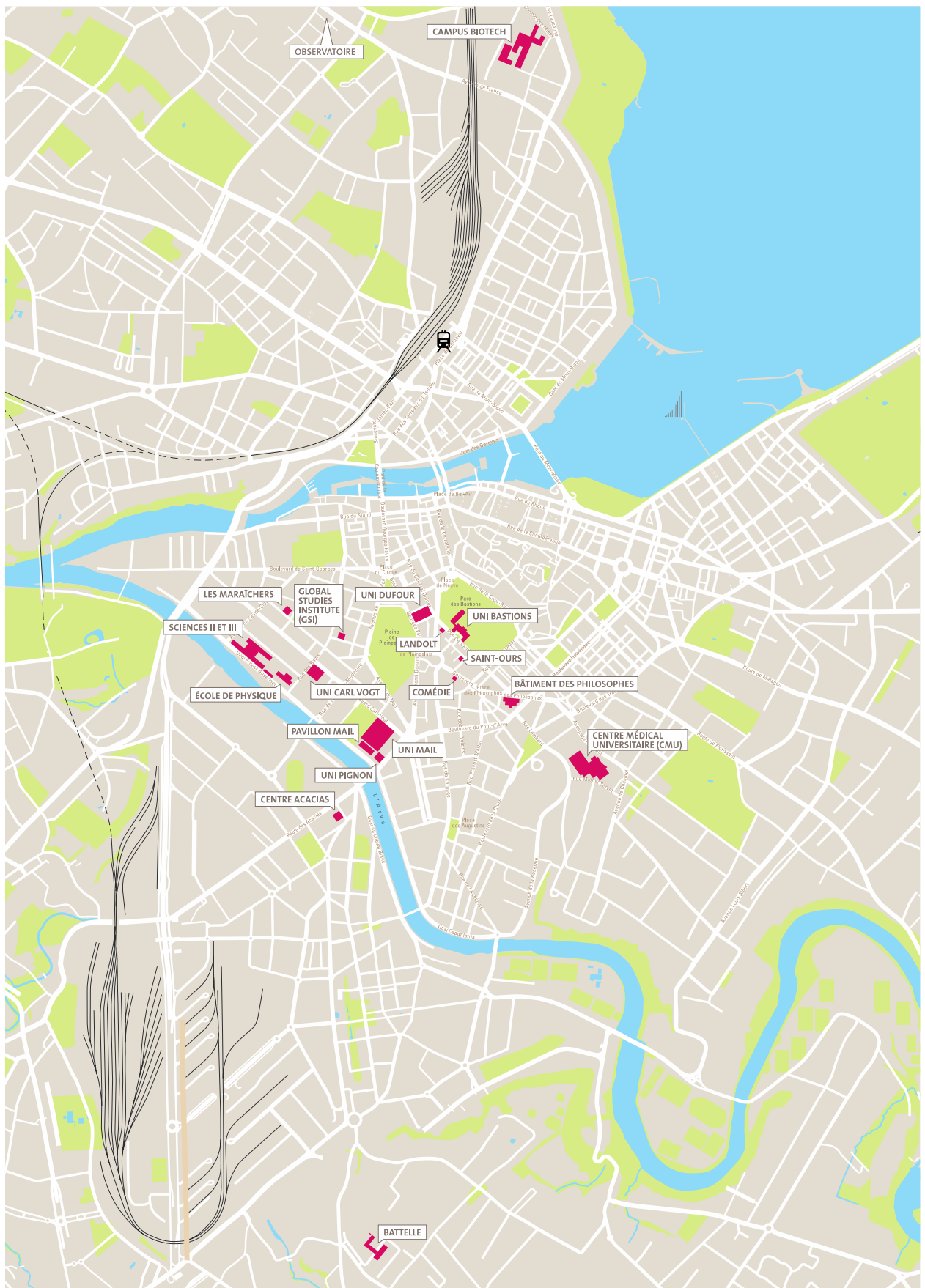
## **FACULTY OF SCIENCE**

---

<b>Uni Carl Vogt</b>	66 bd Carl-Vogt
<b>Sciences II et III</b>	30 quai Ernest-Ansermet
<b>École de physique</b>	24 quai Ernest-Ansermet
<b>Les Maraîchers</b>	13 rue des Maraîchers
<b>Centre Acacias</b>	2-4 rue du Lièvre
<b>Observatoire</b>	51 chemin des Maillettes, Versoix
<b>Centre médical universitaire (CMU)</b>	1 rue Michel-Servet
<b>Battelle</b>	7 route de Drize, Carouge
<b>Campus Biotech</b>	9 chemin des Mines

## **Other UNIVERSITY buildings**

<b>Uni Dufour</b>	24 rue du Général-Dufour
<b>Uni Bastions</b>	5 rue De-Candolle
<b>Saint-Ours</b>	5 rue de Saint-Ours
<b>Comédie</b>	10-12 bd des Philosophes
<b>Landolt</b>	2 rue De-Candolle
<b>Bâtiment des Philosophes</b>	22 bd des Philosophes
<b>Uni Mail</b>	40 bd du Pont-d'Arve
<b>Uni Pignon</b>	42 bd du Pont-d'Arve
<b>Pavillon Mail</b>	40A bd du Pont-d'Arve
<b>Global Studies Institute (GSI)</b>	10 rue des Vieux-Grenadiers



# sciences



**FACULTÉ DES SCIENCES**

30 quai Ernest-Ansermet

CH - 1211 Genève 4

[www.unige.ch/sciences](http://www.unige.ch/sciences)



Atelier de reprographie ReproMail  
Le papier recyclé contribue au développement durable