

TIRIS Summer School

Space and sustainability

June 30th-July 11th 2025
Toulouse, France

ABOUT OUR SUMMER

Are you a Master's (M1/M2) or PhD student?
Join the TIRIS Summer School 2025 and explore
the challenges of space and sustainability!



An interdisciplinary and pioneering excellence program in the sector,
co-organized by TIRIS and UNIVERSEH, the European University Alliance in Toulouse!

You will benefit from excellent interdisciplinary training, combining practical workshops,
inspiring lectures and exchanges between experts. You will also get the chance to discover
Toulouse, European capital of space and aeronautics, while earning ECTS credits towards
your degree.

TIRIS Summer School 2025 is part of a unique dynamic, driven by the TIRIS project and
supported by UNIVERSEH and the University of Toulouse. By combining science, technology
and societal reflection, TIRIS Summer School 2025 aims to train you as tomorrow's leaders,
capable of imagining innovative solutions to climate and space issues.

Join now in Toulouse to rise up to tomorrow's challenges
of space and sustainability !



[Registration Link](#)



TIRIS
Toulouse Initiative
for Research's impact on Society



TIRIS est un projet financé par l'ANR au titre de France 2030 (ANR-20-EXES-0015), par la Région Occitanie et par le Fonds Européen de Développement Régional.

A SUMMER TO TAKE OFF

Who is it for ?

The TIRIS Summer School is open to students with a **master's level or PhD students** who wish to broaden their knowledge and deepen their interdisciplinary approach in the field of space studies and sustainability. With limited spots available, this program aims to deliver high-quality courses on critical issues and trends.

A complete program : Explore, understand, innovate

TIRIS Summer School offers an immersive, interdisciplinary experience entirely in English, structured around 3 main themes:



Environment and sustainable space :
Using space technologies to understand climate change.



Society and sustainable space :
Reflecting on ethical and governance issues related to New Space.



Human and sustainable space :
Addressing the challenges of human resilience in space exploration.

A program of immersion and excursion

- ✦ A guided excursion around Toulouse
- ✦ A visit of La Cité de l'Espace
- ✦ Two social events

Typical day

Morning

Lectures, masterclasses,
round tables
with international experts

Afternoon

Hands-on workshops
and site visits

Evening

Networking activities
and cultural discovery
of Toulouse

DETAILED VIEW OF THE PROGRAM



THEME 1 : ENVIRONMENT AND SUSTAINABLE SPACE

Using space technologies to understand climate change

This theme will cover the remote sensing aspects of observing terrestrial ecosystems, oceans and forests, in order to study, quantify and prevent pollution, and carry out carbon and greenhouse gas assessments and their impacts on ecosystems.

To understand the issues at stake, different types of presentations will be offered in the form of lectures (on oceans and forests, for example) and hands-on workshops using remote sensing tools and satellite data. Participants will be able to exchange ideas with PhD students from the school's partner laboratories, during a half-day of in-person poster sessions and "ma these en 180 s" pitch sessions.

Forecast program



Remote sensing



Greenhouse gases



Carbon footprint



Space mission from conception to satellite launch



Practical workshops and exchange sessions with doctoral students from partner laboratories.



THEME 2 : SOCIETY AND SUSTAINABLE SPACE

Reflecting on ethical and governance issues related to New Space

Today, the space sector is of strategic importance in economic, political and societal terms. In economic terms, the emergence of the "New Space" is profoundly transforming industrial approaches, with the entry of new private players, sometimes from outside the traditional space sector.

Politically and geopolitically, it represents a major challenge for national sovereignty. On a societal level, the space sector raises legitimate questions that require the involvement of all players in society, not just engineers, scientists and political decision-makers.



Space industry economics and New Space financing



Geopolitics & Geo-strategy of space: the key challenges



Ethics and Perception : Acceptability of space & Ethics: cost and benefit, reality of space, space tourism



Space law



Space Policy, Space Programs



Conferences and potential visits of innovative companies



THEME 3 : HUMAN AND SUSTAINABLE SPACE : CHALLENGE « THE MARS VILLAGE »

Teams will be formed to design the first living base on Mars.

- ★ Mars planetology : characteristics, constraints, Mars-Earth opposition (where to locate the base? when to communicate?)
- ★ Living bases in hostile environments: general principles, environmental control, life support system, energy, logistics
- ★ Risks and potential countermeasures in the Martian environment: hypogravity, radiation, regolith, isolation, confinement, contamination, etc.
- ★ Martian astrobiology : exploration and protection of traces of life
- ★ Augmented man for space exploration: myth or reality?
- ★ Space law, governance and ethics of Martian exploration

Participants will have to meet this challenge by integrating the knowledge provided according to a set of specifications to be supplied at the start of the module. The proposed interventions will help build a proposal for a living base on Mars. Each group will be evaluated by a jury during an oral presentation at the end of the session.

HOW TO APPLY ?

The TIRIS x Universeh Summer School Space and Sustainability is open to students both within and outside our university network. With limited spots available, this program aims to deliver high-quality courses on emerging business trends.

It is designed for students enrolled in Higher Education, whether at the Master's or PhD level.

To apply, you will need to fulfil a short online questionnaire and submit :

- A cover letter
- Your most recent grade transcript
- A proof of english proficiency
- A CV or resume

Submit your application by online

<https://enquete.univ-toulouse.fr/index.php/196935?lang=fr>

Deadline for application : March the 14th, 23h59

The Toulouse university site

At the heart of innovation
European

110 000

Students

23

Members
institutions

The Toulouse site plays a central role in the French academic and scientific landscape. Headquarters of Airbus and numerous technology companies, Toulouse is positioned as the "French Silicon Valley".

It is home to UNESCO sites such as the City of Carcassonne, the Canal du Midi and the Basilica of Saint-Sernin.



*At the heart
of innovation
European*

**Summer School
2025 aims
to offer
a unique learning
experience,
at the crossroads
of scientific
excellence
and societal
issues**

The accommodation offered is located near the city center, in a secure residence with practical services (reception, laundry room, common areas). A transport card allows unlimited access to public transport.

The assets of the Toulouse territory

A unique industrial and research ecosystem

Key figures

*A dynamic
community*

5 800

Teacher
researcher

4 100

PhD students

*An international
influence*

5 500

Scientific publications per year
Partnerships in over **100** countries



Cutting-edge infrastructure
access to laboratories, technological
platforms and equipment
world-class

Aerospace Sector

159 600

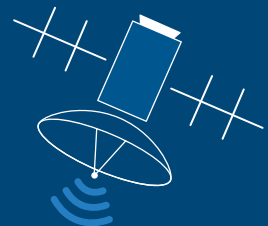
jobs in the Greater
Southwest region

+18 %

sector growth
including **+20%** for aeronautics.

61 %

of aerospace jobs
are located in Toulouse



**A fishpond
of expertise**

*Toulouse
is globally recognized
for its companies,
laboratories
and cutting-edge
infrastructures
in the aerospace sector.*

PRACTICAL INFORMATION



Registration Fees

100 €
(master's level students)

300 €
(PhD students)

Mobility & Excellence scholarships

available
for selected students

Excellence Program

(PhD students)

The package includes*

- ✦ Housing in collective in a 2-to-4 fully furnished apartment or individual on demand**
- ✦ Public transport
- ✦ Lunches (from Monday to Friday)
- ✦ All travel cost and entry tickets to all activities and excursions included in the program
- ✦ Welcome breakfast and farewell cocktail



For students applying through the UNIVERSEH program, no tuition fees are applied. For more information please check with your international office.

* The package does not include flights, insurances (medical insurance), visa, breakfasts, dinners and all extra costs.

** Individual rooms are available on demand - a surplus will be charged

JOIN AN EXCEPTIONAL SCIENTIFIC AND HUMAN ADVENTURE !

The TIRIS x Universeh Summer School 2025 represents an exceptional scientific and human adventure in the service of sustainability and space innovation.

Come to Toulouse and help shape a more sustainable space!



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TIRIS website
LinkedIn TIRIS



Universeh website
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