



UK

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Tour:

EURO SPACE CENTER

Specialisation:

STEM – Science, Physics, Maths and More

Dates available:

All year round

Duration:

5 days / 4 nights

Location:

Transinne, Belgium

THE EURO SPACE CENTER - SAMPLE ITINERARY				
DAY	MORNING	AFTERNOON	EVENING	
1	Travel to EuroSpace, Belgium		Welcome & Safety	Dinner
2	Breakfast	Flight Simulation Training / Moonwalk / Flight Mission & Experiments		Dinner
3	Breakfast	Rocket Theory & Workshop / Multi-Axis chair / Outdoor Space Odyssey		Dinner
4	Breakfast	Rocket Launch / Space Show / Presentation		Dinner
5	Breakfast	Depart Euro Space, Travel Home or to Onward Destination		



Euro Space is a unique European educational centre, dedicated to space travel and learning about the galaxies and planets. This fascinating complex consists of training courses, workshops and numerous exhibitions, where participants can experience an array of interactive and visual displays, with a huge emphasis on 'Making Science Fun'.



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Euro Space Center



Nestling in the heart of the French-speaking Belgium Ardennes, 50 miles northwest of Luxembourg, **Euro Space Center** is a science museum and educational tourist centre devoted to space science and astronautics.

This unique centre also consists of a connected accommodation building where dormitories usually sleep multi-bedded students with each dorm room having a private shower and WC facilities. The site also boasts 2 restaurants (where all meals are taken), a souvenir shop, cinema, numerous classrooms and ample outside space for evening activities.

<http://www.eurospacecenter.be/en>

Video: <https://www.youtube.com/watch?v=adtQ6ss9NDw>

All educational activities are within the centre giving you peace of mind on your visit. The complete programme includes up to 7 hours of activities per day, with the content depending on the duration of your stay and the age of the participants. All activities are given by teachers from the Belgian Ministry of Education, who are on secondment at the Euro Space Center. The 3-day tour comprises activities from the following Lectures, Workshops (Master Classes) and Simulations:

Lectures:

- **Astronomy.** Through this activity we offer a presentation on the universe and our place in it. You will explore the mysterious star that is the Sun and have the opportunity to become familiar with different astronomy concepts such as comets and meteorites. Through film and comments illustrated by many pictures, we'll take you on a journey in the stars.

- **History of space conquest.** Equipped with a running commentary through earphones as you walk through our compelling exhibition, learn about the conquest of space and the space race between the United States and the then Soviet Union.

- **The International Space Station.** Learn all about the International Space Station - how it was built from the first component launched into space in 1998, what its purposes are, some of the critical moments in its short history, its impact on our daily life, what is the future of the ISS, what is life like for those on board, which are the participating space agencies and are the astronauts able to put aside the politics of their political paymasters and work in a spirit of true cooperation?



- **Life in Space.** Through this activity we offer a presentation / discussion on how astronauts live in space and the effects of weightlessness on the human body: direct and indirect effects on the cardiovascular system, balance, anatomy, immune system, sleep, psychological status. We compare the course of a typical day on Earth to a day aboard a Space Shuttle or International Space Station. We'll examine actions that, on Earth, seem very simple (eating, bathing, working, sleeping...) but that, in space, could pose a number of problems. Trainees are encouraged to propose solutions to overcome these disadvantages. The presentation is illustrated with pictures and video clips.

Workshops:

- **Building and launching a space rocket.** This workshop allows students to learn about the principles that govern the flight of a rocket and each will build his/her own micro-rocket. The micro-rockets present many educational advantages in a playful activity. Made from very simple and light materials, they can rise up to 500-600ft altitude before deploying a parachute to gently descend. This technical workshop involves precision work and learning to respect the material, technical guidelines and safety. We can therefore safely test different models of rockets to practically understand the laws of aerodynamics and stability, the influence of the mass of the rocket on its speed, etc.

- **Integration of a satellite in a clean room.** The cleanroom activity involves the integration of a telecommunications satellite into a clean room to prevent potential contamination. To achieve this, they are prepared during a briefing, during which they learn about the first satellite sent into space, what satellites really are, how they work and how they are integrated. The construction and integration of a satellite are done in a typical and rigorous environment called a "clean room". The integration of the satellite therefore calls for a real team effort, requiring a good understanding of the subject and effective oral communication.

Simulations:

- **Simulation of a mission on-board the US Space Shuttle.** The commander and pilot are installed in the cockpit while, in the control room, the Flight Director coordinates the team of engineers who – together – will ensure the smooth progress of the Space Shuttle mission Amicitia.

Every student is invited to slip into the shoes of one of these space scientists for a period of two hours to simulate a space flight. Their common mission is to ensure the space shuttle take off, work on the procedures for placing a satellite in orbit, dock with Space Station Freedom to deliver food and equipment, and finally return to Earth and land at the Kennedy Space Center. A briefing prior to the simulation allows them to familiarise themselves with the technical aspects of the shuttle, the mission profile, the roles and responsibilities, how to operate the computers and the cockpit controls. In the control room, computers and microphones enable the entire team of engineers to remain in contact with the commander and pilot in the cockpit of the shuttle, as well as Space Station Freedom (role-played by the instructor). The pilot and the commander also have computers

and microphones, and will have to become familiar with the many buttons, levers and gauges to use in the cockpit.

This activity offers the student, in addition to the experience of being in the shoes of an astronaut or a space engineer, a real team effort, requiring stress management (considering technical problems may occur during flight), good oral communication with their fellows engineers, and great attention and concentration. They will also have to read, interpret and communicate important information (about the speed or flight path, the level of fuel, air pressure in the cockpit, weather conditions...) displayed on their individual computer screen.



- **Multi-axis chair.** The multi-axis chair was designed in 1960 and has enabled a number of astronauts to train how to react appropriately in very difficult situations of disorientation as a result of spin /roll / yaw moves that could occur during a space flight at those early times. After a brief presentation on the history of multi-axis chair, its operations and its physiological effects on the human body, youth have the opportunity to train on this machine as an astronaut. Small exercises to achieve once strapped and rolling in the multi-axis chair enable them to test their ability to coordinate their movements and keep their visual cues in a situation of complete disorientation.



- **Moonwalk/Marswalk XP.** The Great Training Hall of the Euro Space Center hosts various machines for astronauts training, including the moonwalk. The Moonwalk has enabled the twelve astronauts who walked on the moon to train moving and working on the surface of our natural satellite. Each student will have the opportunity to try this machine, after a quick word of explanation on the history of the conquest of the moon as well as some physical features of our natural satellite, including the causes and consequences of its weaker force of gravity.

- **Zero Gravity Wall.** The microgravity wall simulates the conditions in which astronauts work in space. Equipped with a helmet, the youth takes place on a seat attached, through a pulley, to a barrel that's filled with a quantity of water equivalent to the mass of the person. The counterweight system allows the user to operate in conditions similar to that of weightlessness. A simple thrust on the wall of the structure allows the user to move in the opposite direction of the thrust according to the principle of action-reaction.

- **Rotating chair.** The first hours or even days in space may be quite uncomfortable for the astronauts, of which two thirds are subject to troubles such as headaches, nausea or even hallucinations. These symptoms are due to a physiological phenomenon known as "space sickness". The rotating chair allows astronauts to train for the best possible resistance to space sickness in

order to be able to properly carry out the mission for which they trained for years. In this activity, students discover the causes of space sickness by exploring the balance organ : the inner ear. The physiological explanation of this very unpleasant phenomenon makes them understand the usefulness and the impacts of the workouts on a rotating chair. Finally, students are invited to experience the same sensations as the astronauts by trying themselves in a rotating chair. Beware the dizziness !



Day 1

Dinner on the ferry

Travel by coach and ferry to southern Belgium and settle in to your dormitory accommodation within the centre.

Days 2 – 4

All meals taken at the centre

Activities taken from those detailed above.

Bouillon Castle During your visit to the Euro Space Center you will spend one evening visiting the impressive, medieval Bouillon Castle in the beautiful southern Belgian town of the same name and receive a guided tour by an enthusiastic yet highly knowledgeable volunteer – by torchlight! Built on three rock pitons overlooking the Semois river, the Bouillon Castle is a remarkable monument in the province of Luxembourg, retracing almost a thousand years of history and military architecture. With its stunning vaulted rooms, the Bouillon castle is considered one of the oldest and most impressive feudal buildings in Belgium. Before visiting the castle, you may choose to have dinner in Bouillon itself.



Day 5

Breakfast at ESC, other meals on own

It's time to pack our bags, board our coach and say goodbye to the Euro Space Center. À bientôt!

PJ's Chocolate Factory En route back to the Port of Calais, Visions groups can stop off at PJ's Chocolate Factory **at no extra charge**. Included in the visit is a workshop where students have the opportunity to make some chocolate to take away, and if that is not enough they can shop until they drop in the adjacent chocolate shop. Yum!



Optional extras, time permitting:

The Caves of Han Also en route, and just 15 minutes north of the Euro Space Center, is the town of Han-sur-Lesse, the location of the stunning Caves of Han and the adjacent **Wildlife Park**. A century-old tram takes you to the entrance of one of the most beautiful caves in Europe, replete with enormous ancient stalagmites (one is 7m high) and stalactites. Discover the science behind the development of the caves, both the underground river that runs its entire length and in the formation of the naturally sculptured rock within its great galleries. **Tour length: 1 ¾ hrs**

The Wildlife Park Adjacent to the Caves of Han is a 250 hectare Wildlife Park where you can view animals that still or used to live in this area of Europe: wolves, lynx, brown bears, bison, red, fallow and roe deer, wild boar, ibex, aurochs, mouflon and more. You can explore the park on foot or by safari bus, covering a distance of either 2.5km or 5.5km, so times will vary.



THE EURO SPACE CENTER

Minimum Booking Numbers:

20 students

What's Included:

- ✓ Return flights or luxury coach
- ✓ Full-Board Accommodation
- ✓ Detailed programme based on tour requirements
- ✓ Dedicated and experienced advice and support throughout your booking
- ✓ Access to all Simulators
- ✓ Tuition from Belgian Ministry Appointed Space Specialists
- ✓ Certificate of course completion
- ✓ Euro Space T-Shirt
- ✓ 24-hour emergency cover

What's Not Included:

- Fully Comprehensive Insurance (mandatory)
- UK coach transfers
- Cost of visas, full or collective passports
- Additional Sightseeing / Entertainment Options
- Hotel incidental bills – meals, mini-bar items, recreation charges, purchases billed to room, etc.

As always, our staff are always available to you to answer any questions you may have regarding programming. If we may serve you in any way, please do not hesitate to contact us.

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