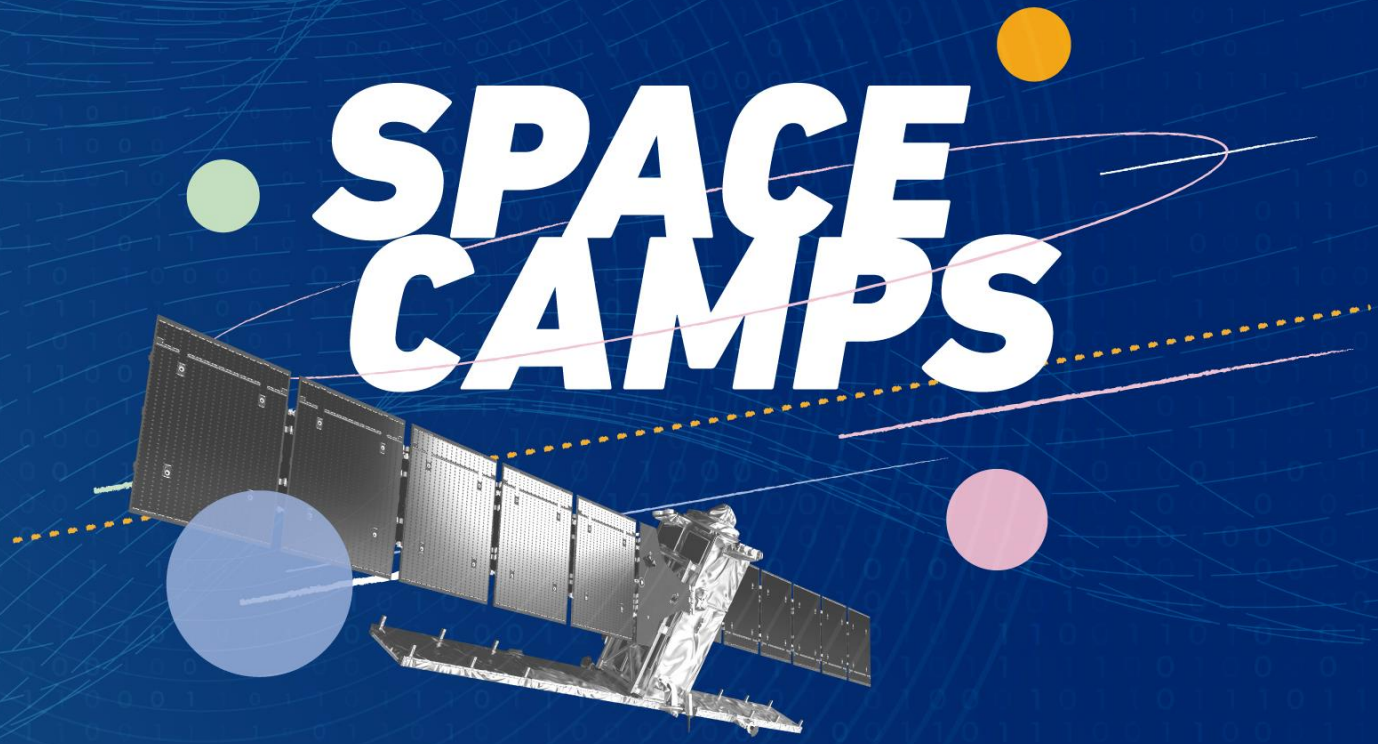
CASSINI #EUSpace
Space Camps

Training Guidelines

November 2026



The CASSINI Space Camps dynamic camp curriculum as a gateway of Europe youth towards a career in space

3 annual editions of the CASSINI Space Camps in 2026, 2027 and 2028

7-10 days duration of fully residential local camps

Across 36 locations in EU Member States and associated countries

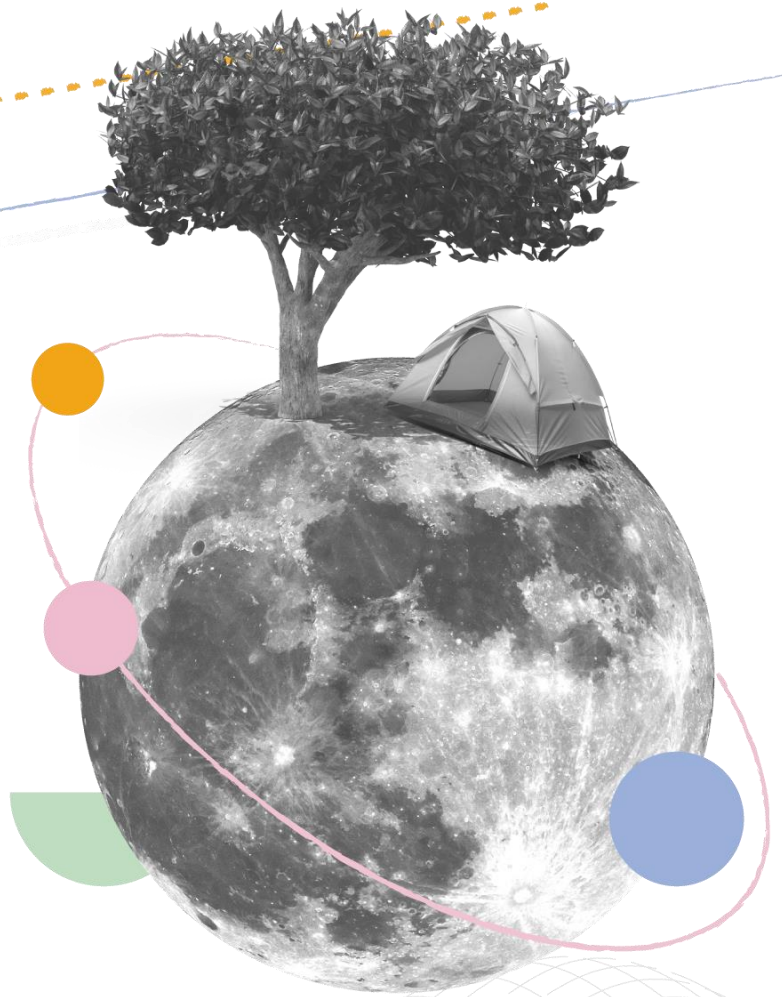
Young participant target group of **14 – 18 years old**

20 - 35 participants at each camp

7 training modules as part of an adaptable curriculum

1 concluding event at the end of each camp

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Space Camps



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2 | How to design your local camp

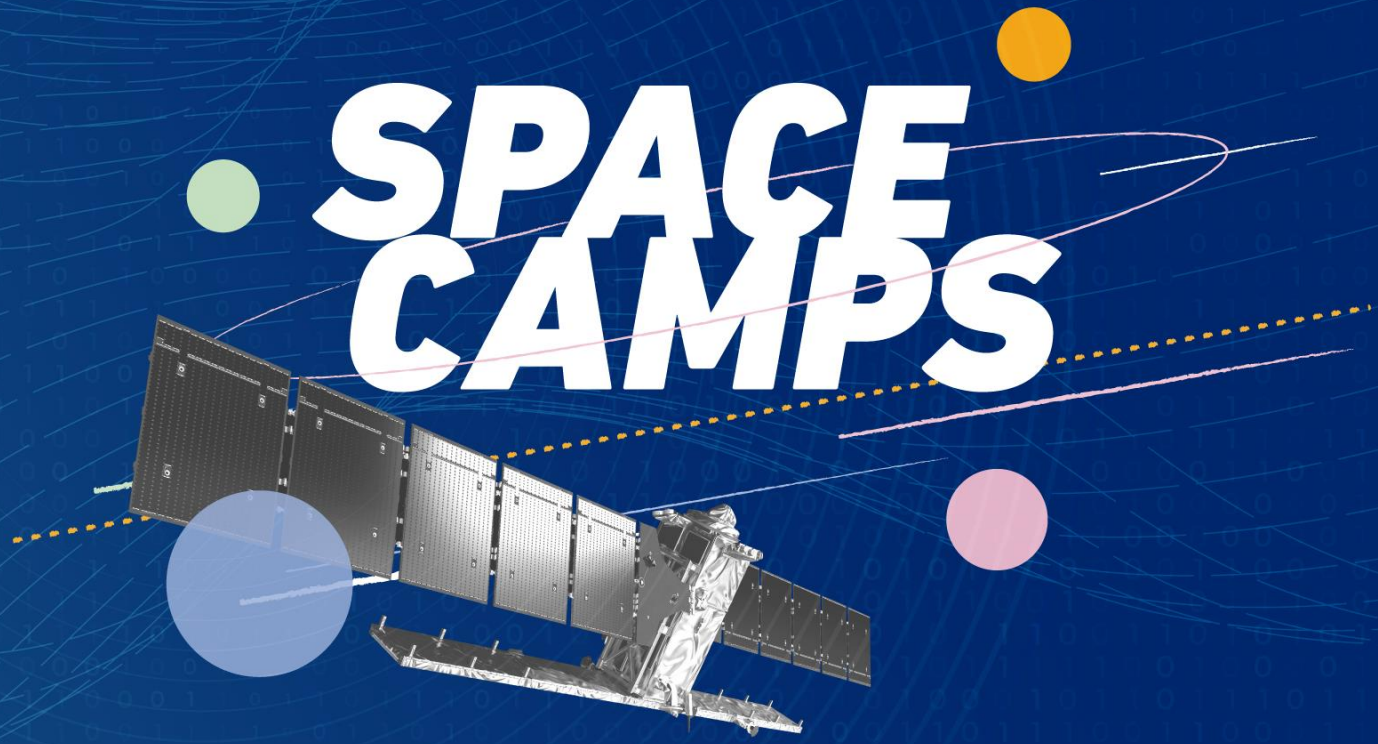
3 | Training Modules & Submodule descriptions

- 1 | Introduction to the Space Industry
- 2 | Space-for-Earth
- 3 | Entrepreneurship for Innovation
- 4 | EU Space Programme
- 5 | New Space Industry
- 6 | Space Exploration
- 7 | Careers in Space

4 | Curricula Template

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Overall Training Guidelines Overview



Learning objectives for Local Training Curricula

Overview of learning objectives

The local training curriculum should enable participants aged 14–18 to gain a first, inspiring and practical understanding of the European space sector, the EU Space Programme, New Space entrepreneurship, and the role of space technologies in addressing real-world challenges. Local Organisers are expected **to adapt the curriculum to their local context, language, ecosystem and available expertise**, while maintaining coherence with the common CASSINI Space Camps learning framework. The curriculum should combine accessible theory, interactive methods, hands-on activities, local examples and a final group project or pitching activity.

By the end of the Space Camp, participants should be able to:

Area	Learning objective
Space awareness	Understand the basic structure of the space sector and the role of institutions, companies, researchers, start-ups and downstream users.
EU Space Programme	Identify the main EU Space Programme components, including Galileo, Copernicus, IRIS², GOVSATCOM and SSA, and describe examples of how they support society, security, sustainability and economic activity.
New Space and entrepreneurship	Understand how commercialisation, private investment, start-ups and innovation are changing the space sector.
Space-for-Earth applications	Describe how satellite data and space-based services can support areas such as climate change, agriculture, disaster management, urban development and connectivity.
Hands-on skills	Apply basic space-related knowledge through practical activities, experiments, data use, design challenges or prototyping exercises.
Problem-solving and teamwork	Work in teams to identify a real-world problem and develop a space-enabled solution, concept or mission idea.
Communication and pitching	Present ideas clearly to peers, mentors, families and local ecosystem representatives during the final event.
Career orientation	Recognise that space careers are diverse and include technical, business, policy, legal, creative and entrepreneurial pathways.
European and local ecosystem awareness	Connect with the European space ecosystem with local opportunities, organisations, role models and follow-up learning pathways.

The 7 core Training Modules of the CASSINI Space Camps 2026-2028

1. Introduction to the Space Industry

Space ecosystem, actors & value chain

2. Space-for-Earth

Real-world uses of space data

3. Entrepreneurship for innovation

From ideas to impactful space ventures

4. EU Space Programme

Galileo, Copernicus, IRIS² & more

5. New Space industry

Commercialisation, start-ups & investment

6. Space Exploration

Missions, Moon, Mars & future frontiers

7. Careers in space

Study paths, jobs & role models

Final Event

Team challenge, pitch & awards

The objective of the space camps is to have a comprehensive curriculum comprising of seven training modules leading to the final event

1. Introduction to the Space Industry

2. Use of space on Earth & practical cases

3. Entrepreneurship for innovation-driven enterprises

4. EU Space Programs

5. ‘New Space’ industry

6. History & Future of space exploration

7. Imagining a career in space

8. Final Event

The participants will be working on space-for-earth projects during the camp that will be presented at the final event

Welcome event

- What's ahead during the week
- Foreshadowing final event

2. Use of Space on Earth & practical use cases

- Explore downstream space applications
- Understand Earth-focused space benefits
- Apply space technology to challenges

3. Introduction to entrepreneurship for innovation-driven enterprises

- Explore space entrepreneurship fundamentals
- Develop innovative business solutions
- Prototype, validate, and pitch ideas

4. Introduction to the EU Space Programme components

- Explore EU Space Programme components
- Understand strategic programme benefits
- Apply EU space data creatively

Final Event

- Presentation of the space-for-earth projects during **pitching event**

Journey of space business ideas – from basic training to pitching the idea

Background | Project Development

2.1	2.2	3.1	3.2	4.1	2.3	3.3	3.4	4.2	4.3
Presenting practical space-for-earth use cases	**Deep dive into sectoral applications**	**A deep dive into Space Entrepreneurship**	**What makes a good team**	**The EU Space Programme unpacked**	**Problem Definition: Which challenges can be solved?**	**Entrepreneurship crash course**	**Solution Design**	**Introduction to EU Space Data**	**Solving earth challenges with EU Space data**
Students explore practical Earth-focused space applications across sectors and real-world challenges	Students choose relevant sectors and explore space applications through practical case studies	Students connect entrepreneurship concepts to space businesses and explore cases, business models, MVPs, and ecosystem challenges	Learn about team dynamics, psychology types, and working effectively together	Students learn key EU Space Programme components, stakeholders, strategic goals, and societal benefits	Students define real-world challenges and explore how available space data can support solutions	Students learn entrepreneurship basics, including strategy, business models, marketing, MVPs, and team building	Students turn business ideas into MVP concepts using prototyping, TRLs, and development roadmaps	Students learn how to access and interpret EU space data for real-world applications	Students combine EU space data and entrepreneurship to develop business ideas for Earth challenges
Example outcome									
Students learn how Earth Observation helps farmers monitor crops and irrigation needs	Students identify precision farming as a promising market for satellite data	Students map a satellite-based startup idea using value proposition, customers, revenues, partners, and MVP assumptions	Students form balanced teams by combining technical, business, creative, and communication skills	Students explain how Galileo, Copernicus, GOVSATCOM, SSA, and IRIS² support European space applications	Students formulate how satellite data could help farmers optimize irrigation and reduce crop losses	Students define a simple business model and pitch structure for their first startup idea	Students design a simple prototype or roadmap showing how their solution could be tested	Students explore Copernicus or Galileo data to identify patterns relevant to their chosen sector	Students structure a business idea using value proposition, customers, revenue streams, and partnerships

The final event will be an inclusive competition where the business ideas will be pitched from the teams in front of an audience

The training guidelines give guidance to the Local Organisers (LOs) while leaving space for flexibility and innovativeness

01

LOs shall include **mandatory modules** with the option to propose innovative learning methods.

02

From the **optional submodules**, LOs choose the ones that they are willing to deliver.

03

If LOs have further ideas, they can add **new sub-modules** that fit the learning objectives of the overall module.

04

LOs choose the **experts/ trainers** that are qualified to deliver the programme.

05

LOs shall provide their proposed local curricula by filling in the **provided training curricula template**.

With the end goal of one conclusive final event that concludes the learnings and findings of the camp

Final Event: From learning to team-based space solutions

Final Event Focus: Teams develop **space-based solutions** addressing real-world challenges, drawing on Space-for-Earth applications, EU Space Programme components, New Space and space exploration topics.

Format

- Concluding event on the **final day**
- Prepared during the **last 2–3 camp days**
- e.g. Space ideathon, hackathon or pitching competition
- Hands-on, **team-based challenge** using space knowledge
- **Storytelling element** based on real or hypothetical space scenarios
- Possible hybrid / cross-location format

Participants & audience

- Teams of Space Camp participants
- Families invited
- Local space ecosystem representatives invited

Closing

- Focus on teamwork over competition
- Equal participation opportunities for all teams
- **Diploma or award ceremony** after the final event

Learning objectives for the final group project

Overview

The final group project should allow participants to apply what they learned during the camp by **developing a practical downstream space-based solution**. Using satellite data, GNSS, Earth Observation, space-enabled services or other EU Space Programme components, participants should address a real-world societal, environmental, technical or business challenge. The **final 2–3 days should prepare participants for this closing activity**, which may take the form of an ideation challenge, hackathon, mission design challenge or prototype activity concluding in a pitching event.

By the end of the final project, participants should be able to:

Area	Learning objective
Problem definition	Identify a clear real-world challenge where downstream space data or services could create value.
Use of space data and services	Explain how satellite data, GNSS, Earth Observation or other space-enabled services can help address the challenge.
Downstream solution design	Develop a practical concept for a downstream space application, service or prototype.
User and stakeholder thinking	Consider the needs of users, local communities, public authorities, businesses or other relevant stakeholders.
Feasibility thinking	Assess basic requirements such as data availability, technical resources, risks, implementation steps and potential limitations.
Impact thinking	Explain the expected value of the proposed solution for society, the environment, the economy or the local community.
Team collaboration	Work in a team, divide tasks and combine different skills and perspectives to develop the solution.
Pitching	Present the downstream space-based idea in a structured, engaging and age-appropriate way.
Reflection	Reflect on how downstream space applications can influence future studies, career choices or engagement with space.

Some mandatory modules are in place for the local organisers to adapt with their own innovative learning methods

Subject to change pending 1st edition feedback. Updates will be announced in March 2027

1. Introduction to the space industry: structure, specificities, capabilities

- 1.1 Who is who in space?
- 1.2 The space value chain 101

2. Use of space on Earth & practical use cases

- 2.1 Presenting practical space-for-earth use cases
- 2.2 Deep Dive into sectoral applications

3. Introduction to entrepreneurship for innovation-driven enterprises

- 3.1 A deep dive into Space Entrepreneurship
- 3.2 What makes a good team

4. Introduction to the EU Space Programme components

- 4.1 The EU Space Programme unpacked

5. The emerging 'New Space' industry

- 5.1 New Space Disruptors: Who's Changing the Game?

6. History and future of space exploration

- 6.1 History of Space Exploration

7. Imagining a career in space

- 7.1 The Space Career Handbook

Mandatory | Final Event | Optional | LO suggestions

The centre of the camp is a series of entrepreneurship-oriented project-based activities that lead to a final event

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1. Introduction to the space industry: structure, specificities, capabilities

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3. Introduction to entrepreneurship for innovation-driven enterprises

- 3.1 A deep dive into Space Entrepreneurship
- 3.2 What makes a good team
- 3.3 Entrepreneurship crash course
- 3.4 Solution Design

4. Introduction to the EU Space Programme components

- 4.1 The EU Space Programme unpacked
- 4.2 Introduction to EU Space data
- 4.3 Solving earth challenges with EU Space data

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Mandatory | Final Event | Optional | LO suggestions

To guide the local organisers, there is a series of optional modules that can be included by choice

Subject to change pending 1st edition feedback. Updates will be announced in March 2027

1. Introduction to the space industry: structure, specificities, capabilities

- 1.1 Who is who in space?
- 1.2 The space value chain 101
- 1.3 Icebreaker: What do you actually know about space?
- 1.4 Science Slam
- 1.5 Tackling space challenges
- 1.6 Space dual-use: Treaties & critical thinking

2. Use of space on Earth & practical use cases

- 2.1 Presenting practical space-for-earth use cases
- 2.2 Deep Dive into sectoral applications
- 2.3 Problem Definition: Which challenges can be solved?
- 2.4 Geocaching: Space Treasure Hunt
- 2.5 EO Imagery Game
- 2.6 App API Development related to EO space

3. Introduction to entrepreneurship for innovation-driven enterprises

- 3.1 A deep dive into Space Entrepreneurship
- 3.2 What makes a good team
- 3.3 Entrepreneurship crash course
- 3.4 Solution Design
- 3.5 Understanding users & market
- 3.6 Team building activity
- 3.7 Pitch training
- 3.8 Critical thinking on data & information
- 3.9 Responsible use of LLM
- 3.10 Financing your space solution

4. Introduction to the EU Space Programme components

- 4.1 The EU Space Programme unpacked
- 4.2 Introduction to EU Space data
- 4.3 Solving earth challenges with EU Space data
- 4.4 #EUSpace matchmaking: connect the dots!

5. The emerging 'New Space' industry

- 5.1 New Space Disruptors: Who's Changing the Game?
- 5.2 The New Space Startup game
- 5.3 The New Space Investment game
- 5.4 Role play: public-private cooperation in motion

6. History and future of space exploration

- 6.1 History of Space Exploration
- 6.2 Astronomy Night
- 6.3 Planetarium/ Observatory Visit
- 6.4 Design of mission proposal
- 6.5 Launch your rocket
- 6.6 Skywalk - Space object tracking using apps
- 6.7 Exploring with the 'Kerbal Space Programme' game
- 6.8 Build a LEGO moon/ mars rover
- 6.9 Virtual Reality Exploration of Space
- 6.10 Building a HAM radio ground station
- 6.11 On-the-Air

7. Imagining a career in space

- 7.1 The Space Career Handbook
- 7.2 Space Talks: Beyond Astronauts
- 7.3 Space Markets & Technologies
- 7.4 Personal USP
- 7.5 Career Mentoring

Mandatory | Final Event | Optional | LO suggestions

Local Organisers are encouraged to 'design their own camp' by bringing forward suggestions that adhere to the learning objectives and methods proposed

Subject to change pending 1st edition feedback. Updates will be announced in March 2027

1. Introduction to the space industry: structure, specificities, capabilities

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- 1.2 The space value chain 101
- 1.3 Icebreaker: What do you actually know about space?
- 1.4 Science Slam
- 1.5 Tackling space challenges
- 1.6 Space dual-use: Treaties & critical thinking
- Local Organiser's suggestions

2. Use of space on Earth & practical use cases

- 2.1 Presenting practical space-for-earth use cases
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4. Introduction to the EU Space Programme components

- 4.1 The EU Space Programme unpacked
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- 6.11 On-the-Air
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- 7.4 Personal USP
- 7.5 Career Mentoring
- Local Organiser's suggestions

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Mandatory | Final Event | Optional | LO suggestions

The training guidelines provide a framework to Local Organisers (LOs) while leaving space for local adaption

01

LO’s include the **mandatory modules into their curriculum** to ensure consistency across all Space Camps.

02

LO’s select **optional submodules** based on local priorities, audience needs and available recourses.

03

LO’s may propose additional modules that fit the **learning objectives** of the overall programme.

04

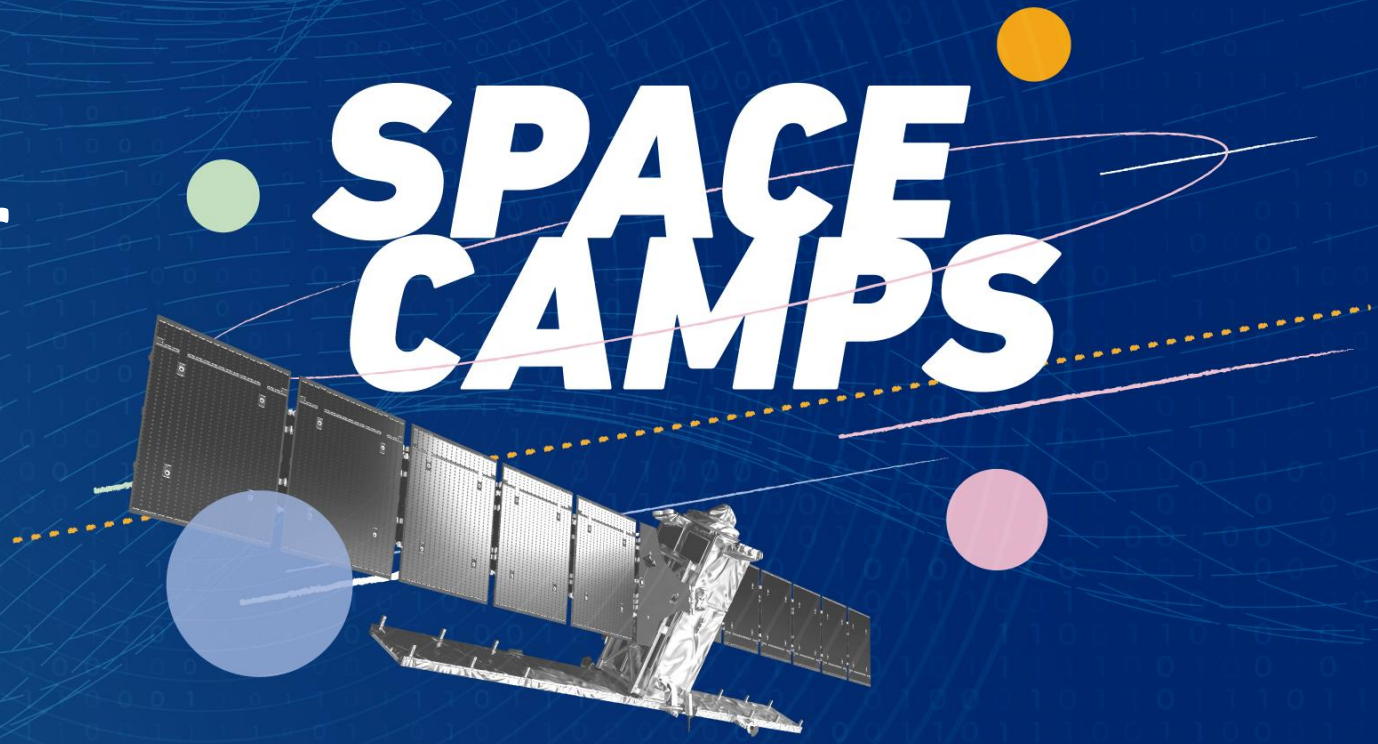
LO’s dedicate time for **team-based project work** during the last 2–3 camp days, leading to a concluding final event.

05

LO’s choose qualified **experts/ trainers** to deliver the selected programme content.

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How to design your local camp



The Five I's guiding the design of the CASSINI Space Camps

Inspirational

Utilise **storytelling and role models** to deliver the camp activities. Not just a mere transfer of information, but also with fun activities that spark a **lasting sense of wonder and ambition**



Innovative

The CASSINI Space Camps offer a **flexible, modular curriculum** developed with subject matter experts that can be adapted to a variety of local contexts. We emphasise real-world space industry applications and **preparing participants** for future innovation driven roles.



Interdisciplinary

The interdisciplinary approach helps participants understand how **different fields come together** in the space industry and how a **diversity of skill sets** and perspectives can be leveraged



Inclusive

Inclusive and accessible to students from **all backgrounds** across multiple EU Member States and associated countries, catering to **different learning styles and needs as well as local adaption.**



Impactful

The CASSINI Space Camps are the **starting point** where students can **kickstart** their career development in the space sector, get **connected** to an international network and contribute to the **real world.**



Interactive learning methods tailored to young audiences aged 14 to 18 to deliver the training sub-modules



Workshop

Interactive workshops will include entertaining features for active engagement

Training

Trainings shall be held in an interactive format, rather than traditional lectures

Excursion

The format of excursions is encouraged for active learning



Game

Gamification shall be used to deliver the training contents

Examples

- Flipped classroom
- Experiments
- Coding
- Case studies
- Problem-based learning
- Storytelling

- Expert talks
- Instructor-led multimedia presentations
- VR/ AR learning videos
- Software demos
- Videos

- Stargazing and astronomy
- Company visits
- Musea visits
- Planetarium/ Observatory
- University visits

- Quiz nights
- Space trivia
- Team-building activities
- Space movie nights
- Geocaching game (outdoor)
- VR/ AR gaming
- Mock Debate
- Role Playing exercises
- Board games

Modules and learning methods may be adapted by levels: **Introductory, Applied and Advanced** for potential adaption to different age groups.

Interactive learning methods should be applied throughout all chosen sub-modules

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- 3.9 Responsible use of LLM
- 3.10 Financing your space solution

4. Introduction to the EU Space Programme components

- 4.1 The EU Space Programme unpacked
- 4.2 Introduction to EU Space data
- 4.3 Solving earth challenges with EU Space data
- 4.4 #EUSpace matchmaking: connect the dots!

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- 7.1 The Space Career Handbook
- 7.2 Space Talks: Beyond Astronauts
- 7.3 Space Markets & Technologies
- 7.4 Personal USP
- 7.5 Career Mentoring

Note: These are suggestions. You may adapt the learning methods to your preference.

Workshop | Training | Excursion | Game

Guidance for Local Organisers

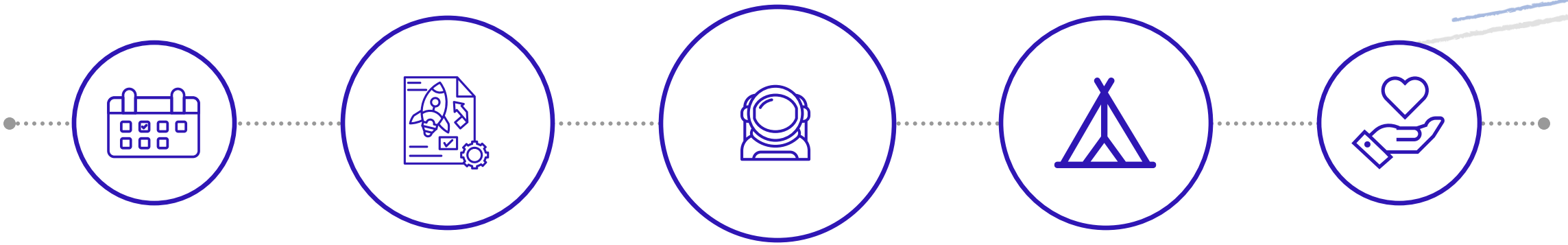
Overview

Local Organisers should use the **outlined learning objectives as a reference when designing their local training curricula**. Each local session should clearly link to at least one learning objective and should combine knowledge transfer with interactive learning, such as stories, videos, quizzes, games, group work, experiments, expert talks or local case studies. The content should be accessible for 14- to 18-year-olds and may be adapted by age group where needed.

Local Organisers should ensure that the curriculum remains:

Principle	Practical information
Locally relevant	Use local examples, experts, companies, universities or public-sector actors where possible.
Youth-friendly	Avoid overly technical formats; use simple explanations, visuals and interactive methods.
Hands-on	Include practical activities, demonstrations, experiments, data exercises or prototyping elements.
Inclusive	Design sessions that work for different learning styles, backgrounds, language levels and interests.
Connected to the final project	Build knowledge and skills progressively so that participants are prepared for the final challenge.
Future-oriented	Help participants see concrete next steps after the camp, including studies, careers and further CASSINI opportunities.

Start with a welcome event!



Agenda

Inspire the students of what waits for them ahead.

Project

Make a separate introduction to the students about the project-based activities they will be doing that are relevant and leading to the final event.

Fun

Most importantly, keep it fun! Plan a game or icebreaker!

Facilities

Don’t forget to show the students around!

People

Make sure they meet the people that are there for them during the camp.

End with a final event!



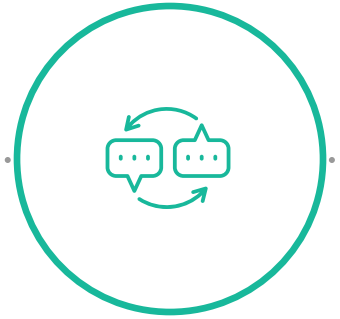
Reflection

Reflect on the activities of the past week and facilitate networking and social time between students.



Pitching

Let the students present their space-enabled solutions in teams. Encourage a collaborative approach and build the confidence in the students to treat this as a learning experience. Include a diploma/ award ceremony.



Feedback

Gather feedback from the students about their satisfaction related to the camp programme through written survey forms.

How to design your camp!

01

Open the day-by-day schedule (template available)

02

Place the sub-modules that are marked with **'Final Event'** in a logical order in the schedule, so that those **project-based activities** lead naturally to a final event on the last day.

03

Collect all the **mandatory submodules** and place them in the schedule.

04

For each mandatory submodule, propose a **method of delivery**. Think of your existing facilities, experts and resources. The **requirement** is that the workshop, training, game or excursion you will design fulfils the learning objectives.

05

For the remaining time you can pick and choose from any of the **optional submodules** you find interesting and place them in the schedule at your convenience. Alternatively, **you can add your own activities** that are not included in this document.

Note: It must be ensured that academic curricula stand in balance with spare time activities

A curriculum template that allows the local organisers to design their own camp and calculate the time spent on all activities during the week

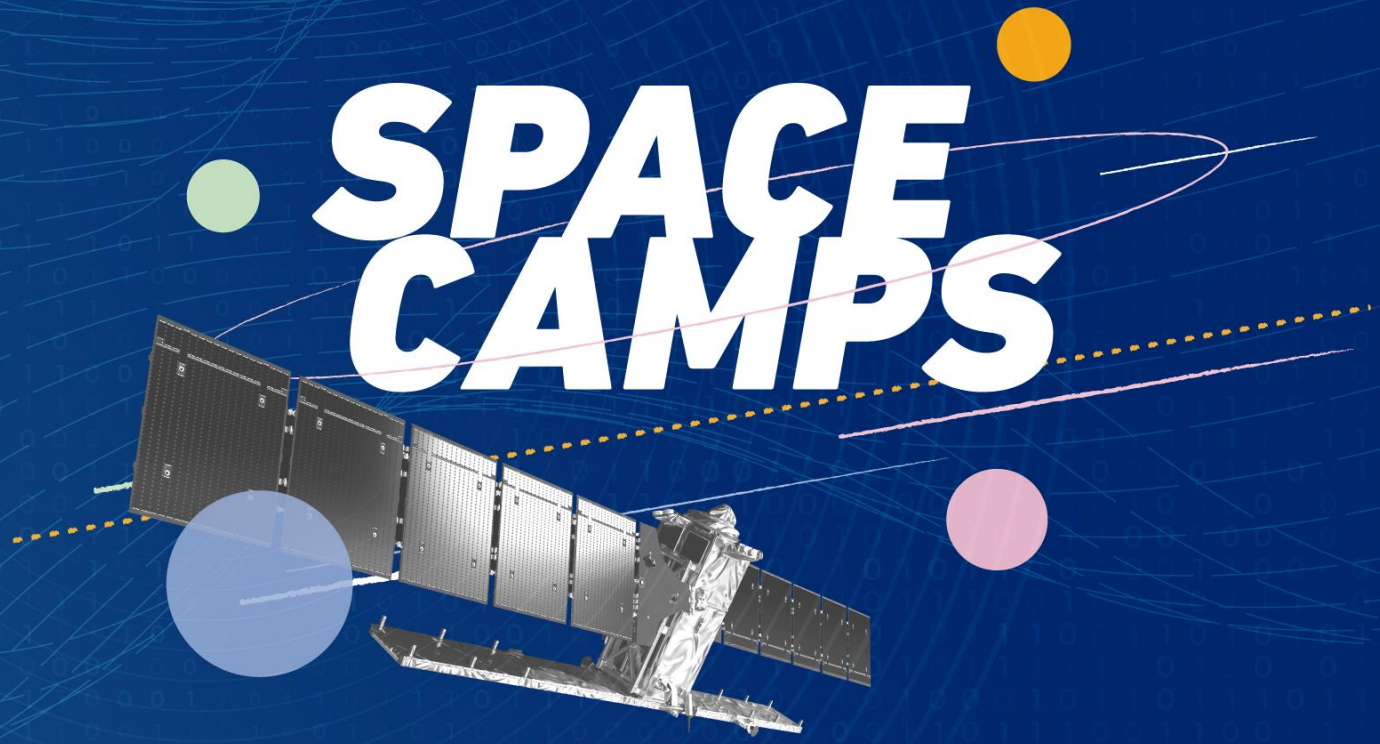
	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5	DAY 6	DAY 7	DAY 8	DAY 9	DAY 10
Mandatory and final event sub-modules	1.1. Who is who in space 1.2. The space value chain 101 ~ 1 hours	2.1. Presenting practical space-for earth use cases 2.2 Deep Dive into sectoral applications ~ 2 hours	3.1. A deep dive into Space entrepreneurship ~ 1 hours	3.2 What makes a good team 4.1. The EU Space Programme Unpacked ~ 3 hours	5.1. New Space Disruptors ~ 2 hours	6.1. History of Space Exploration 7.1 Space Career Handbook ~ 2 hours	2.3. Problem definition 3.3 Entrepreneurship crash course ~ 3 hours	3.4. Solution design 4.2. Introduction to EU Space data ~ 3 hours	4.3 Solving Earth challenges with EU space data ~ 3 hours	Final Event with award ceremony ~ 3 hours
Optional sub-modules	Optional submodules ~ 4 hours	Optional submodules ~ 3 hours	Optional submodules ~ 3 hours	~ 4 hours	Optional ~odules ~ 2 hours	Optional submodules ~ 2 hours	Optional submodules ~ 1 hours	Optional submodules ~ 2 hours	Optional submodules ~ 3 hours	Optional submodules ~ 3 hours
Your proposed sub-modules	Local Organiser Suggestions ~ x hours	Local Organiser Suggestions ~ x hours	Local Organiser Suggestions ~ x hours	Local Organiser Suggestions ~ x hours	Local Organiser Suggestions ~ x hours	~ x hours	al Organiser ggestions ~ x hours	Local Organiser Suggestions ~ x hours	Local Organiser Suggestions ~ x hours	Local Organiser Suggestions ~ x hours
Other activities (sports, outdoor, games etc.)	Campfire, Social Gathering ~ 2 hours	Team sports, Social ~ 3 hours	Long distance hike ~ 4 hours	~ 2 hours	Campfire Rafting ~ 4 hours	Campfire ~ 2 hours	Social Gatherings ~ 2 hours	Team sports ~ 3 hours	Campfire ~ 3 hours	Social Gatherings ~ 3 hours
	7 hours	8 hours	8 hours	9 hours	9 hours	5 hours	6 hours	8 hours	7 hours	8 hours

EXAMPLE

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Space Camps

Training Modules and Submodules Description



The 7 core Training Modules of the CASSINI Space Camps 2026-2028

1. Introduction to the Space Industry

Space ecosystem, actors & value chain

2. Space-for-Earth

Real-world uses of space data

3. Entrepreneurship for innovation

From ideas to impactful space ventures

4. EU Space Programme

Galileo, Copernicus, IRIS² & more

5. New Space industry

Commercialisation, start-ups & investment

6. Space Exploration

Missions, Moon, Mars & future frontiers

7. Careers in space

Study paths, jobs & role models

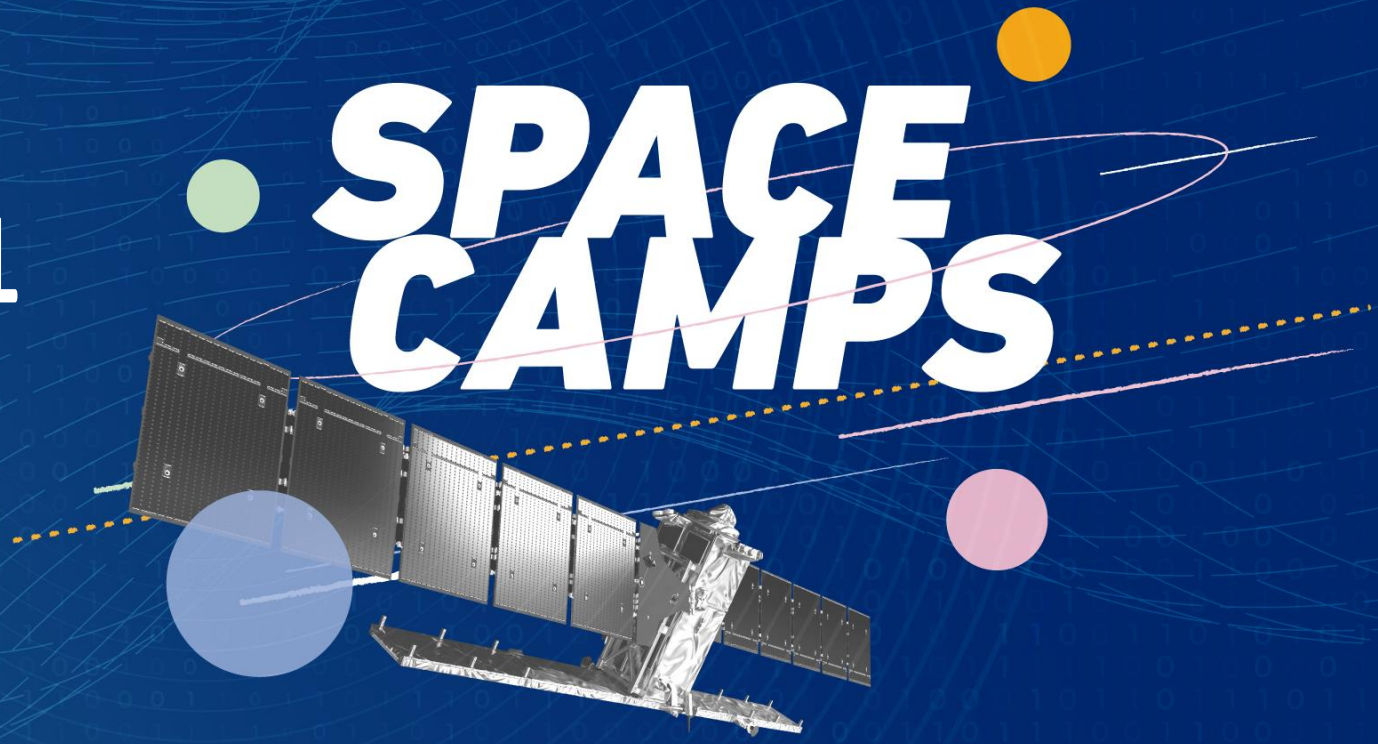
Final Event

Team challenge, pitch & awards

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Space Camps

Training Module 1

Introduction to the space industry – structure, specificities, capabilities



Overview Training Module 1

1. Introduction to the Space Industry – Stucture, specificities, capabilities

- 1.1 Who is who in space?
- 1.2 The space value chain 101
- 1.3 Icebreaker: What do you actually know about space?
- 1.4 Science Slam
- 1.5 Tackling space challenges
- 1.6 Space dual-use: Treaties & critical thinking
- Local Organiser's suggestions

Mandatory | Final Event | Optional | LO suggestions

Training Module 1: Introduction to the space industry – structure, specificities, capabilities

Module description

This module explores the **structure**, **capabilities** and **dynamics** of the global space industry. Participants will examine the space value chain from manufacturing and launch to downstream applications, the main public and private stakeholders. The geopolitical comparisons to other regions, and an analysis of recent shifts in R&D, regulations and commercial trends.

Learning Objectives

- Understand the key players in the space industry and how they work together
- Learn about the space value chain, from rockets to satellites and satellite services
- Learn about the global role of regional space players

Proposed Learning Methods

- Training
- Workshop
- Game
- Excursion

Mandatory sub-modules

1.1. Who is who in space?

'Who is who in space?' is a multimedia introduction to how the space sector works and who are the key players. The training provides an overview of global players and how private and public stakeholders shape the sector globally. Emphasis is put on the European space sector and a contrast is made with the rest of the world. An interactive lecture is foreseen with quizzes.

1.2. The space value chain 101

This submodule helps students understand the space value chain, the key economic facts behind it and how different stakeholders collaborate to contribute to space missions. Students will learn about the upstream (e.g., manufacturing and launch) and downstream (e.g., applications and services) segments.

Optional sub-modules

1.3. Icebreaker: What do you actually know about space?

This session serves as an engaging icebreaker that helps students reflect on their current understanding of space, dispel myths, and spark curiosity for the rest of the camp.

1.4. Science Slam

In the *Science Slam* submodule, students are tasked with choosing a complex scientific concept related to space or Earth sciences and explaining it in a creative and engaging way to an audience.

1.5 Tacking space challenges

Immerse students in a simulated space law challenge to make abstract concepts tangible and relatable. Prepare real-world-inspired challenges related to space law, Assign students roles, such as governments of affected countries, representatives of private space companies, international space institutions and inspire them to interact and pursue solutions on space challenges.

1.6 Space dual-use: Treaties & critical thinking

In this submodule, students will explore how to analyse real-world dilemmas in space security, commercialisation, and geopolitics.

Submodule 1.1: Who is who in space?

Mandatory

Module 1. Introduction to the Space Industry

Content description

This lesson provides a comprehensive overview of the major players shaping the space industry. Students will explore the global roles of organisations & agencies like the UN Office for Outer Space Affairs, global space actors (NASA, ESA, CNSA, ISRO), European public stakeholders (EUSPA, the European Commission, ESA) and private companies (SpaceX, Blue Origin, Rocket Lab, The Exploration Company). Emphasis is placed on understanding **their collaborative and competitive dynamics**, highlighting real-world missions and achievements.

Learn about the achievements of the different organisations and their **historic contributions to the space industry**. Make an interactive game/ quiz, engaging the students to understand the different players.

Underline the **specificities of the European space stakeholder map** and contrast it to the global landscape.

Learning objectives

- Identify key public and private players in the space sector.
- Understand the roles and missions of space agencies and companies.
- Learn about global collaboration in space exploration and commercialisation.

Learning Methods

- Company/ institution representatives to give lecture about their experience
- Multimedia presentation with interactive quiz
- Design a game that teaches students these concepts by roleplaying
- Visits to universities or important institutions to learn the role they play in the industry

Submodule 1.2: The space value chain 101

Mandatory

Module 1. Introduction to the Space Industry

Content description

This submodule starts by exploring the space value chain, from satellite manufacturing to launch services and beyond. Learning about the space value chain will be essential when students are invited in other training modules to think entrepreneurially about building downstream space services.

The focus will be on the interconnected roles of research organisations, manufacturers, launch providers, and service operators. The lesson introduces the upstream and downstream segments of the space industry, using relatable examples such as building a CubeSat or launching a commercial satellite for EO.

Use relevant space mission examples from the EU Space Programme (e.g the Sentinel satellites), giving an overview of the manufacturing to the customer services chain.

Participants will be invited to assess any changes in industry dynamics within the last decade and identify trends, such as in R&D spending and in the regulatory landscape.

Learning objectives

- Understand the space value chain and how different stakeholders collaborate to contribute to space missions
- Identify the upstream (e.g., manufacturing and launch) and downstream (e.g., applications and services) segments
- Describe the areas where entrepreneurial companies are developing new markets and give examples of commercial space revolution

Learning Methods

- Company/ institution representatives to give lecture about their experience
- Multimedia presentation with interactive quiz
- Design a game that teaches students these concepts by roleplaying
- Visits to universities or important institutions to learn the role they play in the industry

Submodule 1.3: Icebreaker – what do you actually know about space?

Optional

Module 1. Introduction to the Space Industry

Content description

This session serves as an engaging icebreaker that helps students reflect on their current understanding of space, dispel myths, and spark curiosity for the rest of the camp. The goal is to create an interactive, light-hearted environment where students actively participate and share their thoughts. Start by introducing the activity with a **brief discussion** on how space is often misunderstood and filled with common misconceptions.

Steps for Organisers:

1. Prepare a series of space-related questions that touch on popular topics, such as the solar system, astronauts, space exploration, and common space myths.
2. Ask students to respond individually or in teams, through a Quiz game platform (e.g. Kahoot or Mentimeter) keeping the atmosphere fun and relaxed.
3. After each question, discuss the correct answer and provide a brief explanation, highlighting any misconceptions students may have.

Learning objectives

- Cultivate an engaging, open-minded attitude toward learning complex space concepts, by debunking common myths
- Encourage active participation through low effort activities

Learning Methods

Follow the game instruction and receive materials to make the game happen

Materials needed

- Trivia questions and answers (printed or digital)
- Myth-busting cards or statements
- Polling tools (Mentimeter, Kahoot etc.)
- Flipchart/whiteboard for brainstorming session

Submodule 1.4: Science Slam

Optional

Module 1. Introduction to the Space Industry

Content description

In the *Science Slam* submodule, students are tasked with choosing a complex scientific concept related to space or Earth sciences and explaining it in a creative and engaging way to an audience. The goal is to take a challenging topic and break it down into simple, entertaining, and accessible language, using visual aids, metaphors, and interactive demonstrations. Students will work in teams or individually to prepare their presentations, and the session culminates in a fun competition where each student or team presents their work.

You may implement a voting process from the audience, for the most innovative, clear, and engaging explanation. The focus is on creativity, clarity, and enthusiasm, with the ultimate aim of fostering a love for science and promoting effective communication skills.

Learning objectives

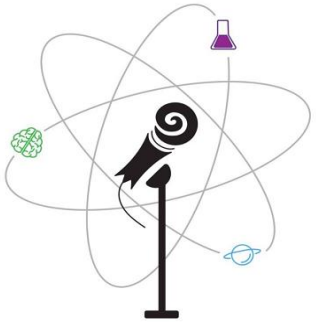
- Understand how to communicate complex scientific topics and create entertaining content
- Foster creativity in communicating science to a diverse audience, making it relatable and fun
- Gain confidence through friendly competition

Learning Methods

Follow the game instruction and let the students develop their pitches freely

Materials needed

- Access to computers/tablets for research and presentation creation
- Art supplies for posters, models, or other visual aids
- Projector and screen for digital presentations
- A microphone or sound system to ensure the audience can hear the presentations.



Submodule 1.5: Tackling space challenges

Optional

Module 1. Introduction to the Space Industry

Content description

Immerse students in a simulated space law challenge to make abstract concepts tangible and relatable.

Scenario Cards: Prepare real-world-inspired challenges related to space law, such as:

- Space Debris Crisis: A large defunct satellite is predicted to collide with an active satellite belonging to a different country. How should this be resolved?
- Asteroid Mining Dispute: Two private companies claim ownership of resources from the same asteroid.
- Radiofrequency Interference: A nation's satellite is disrupted by signals from a private telecom satellite.

Roles: Assign students roles, such as:

- Governments of affected countries.
- Representatives of private space companies.
- International space law mediators.

Activity Flow:

- Brainstorming (10 minutes): Each group discusses their role and formulates a plan or argument.
- Resolution (20 minutes): Groups present their case and negotiate a resolution.

Learning objectives

- Students learn how space law applies to real-life problems, while practicing diplomacy and critical thinking
- Analyse real challenges and consider possible solutions
- Making the complex topic of space law both accessible and enjoyable

Learning Methods

Follow the game instructions

Submodule 1.6: Space dual-use – treaties & critical thinking

Optional

Module 1. Introduction to the Space Industry

Content description

Space technology is **not just for peaceful exploration**, as many innovations have **dual-use applications**, meaning they can serve both civilian and military purposes. In this session, students will explore the **ethical dilemmas of space technologies**, examine the role of international treaties, and discuss how nations **balance cooperation and competition** in space.

The lecture will cover:

- The dual-use nature of space technologies (e.g., GPS, Earth Observation, satellite communications)
- International space treaties & policies (Outer Space Treaty, Artemis Accords, Liability Convention)
- Ethical challenges of space militarization, ASATs (anti-satellite weapons), and private space ventures
- Real-world case studies on how space technology impacts global security and governance.

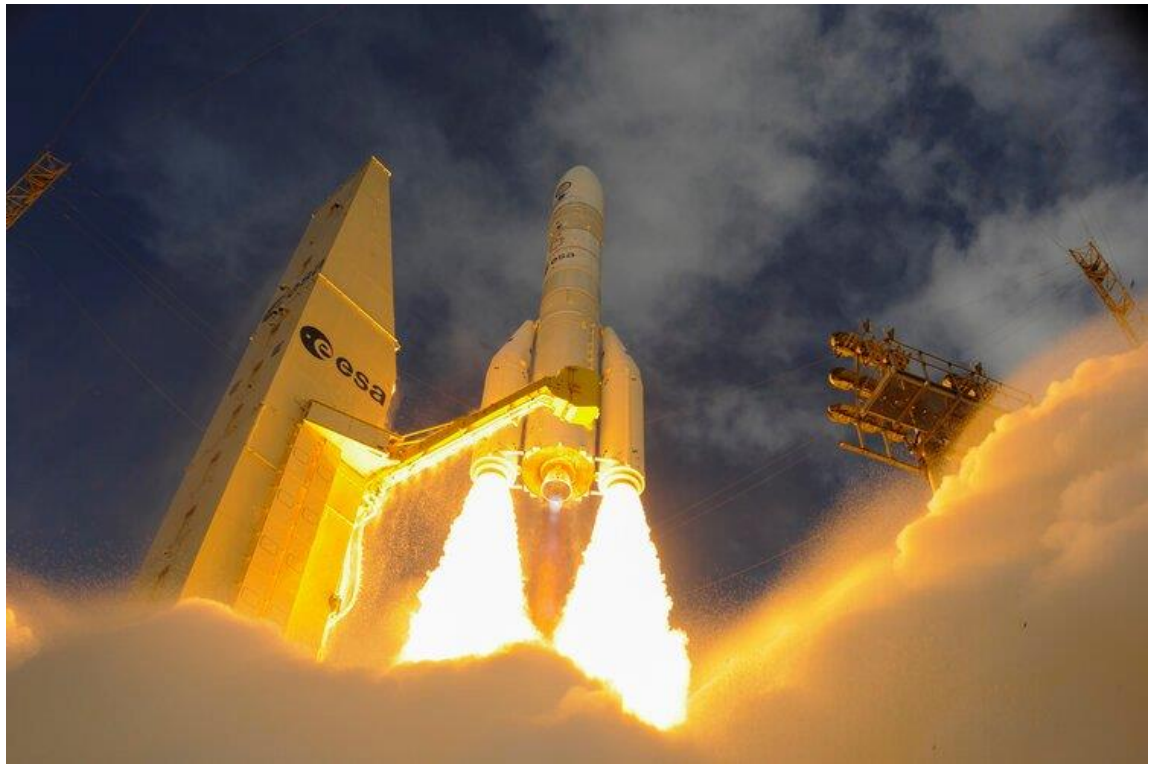
Learning objectives

- Understand what dual-use technology means in space applications
- Learn about the Outer Space Treaty and key international agreements
- Analyse real-world dilemmas in space security, commercialisation, and geopolitics
- Develop critical thinking on who owns space and how to ensure responsible use

Learning Methods

Expert talks / integration within another submodule about the space industry

Your turn!



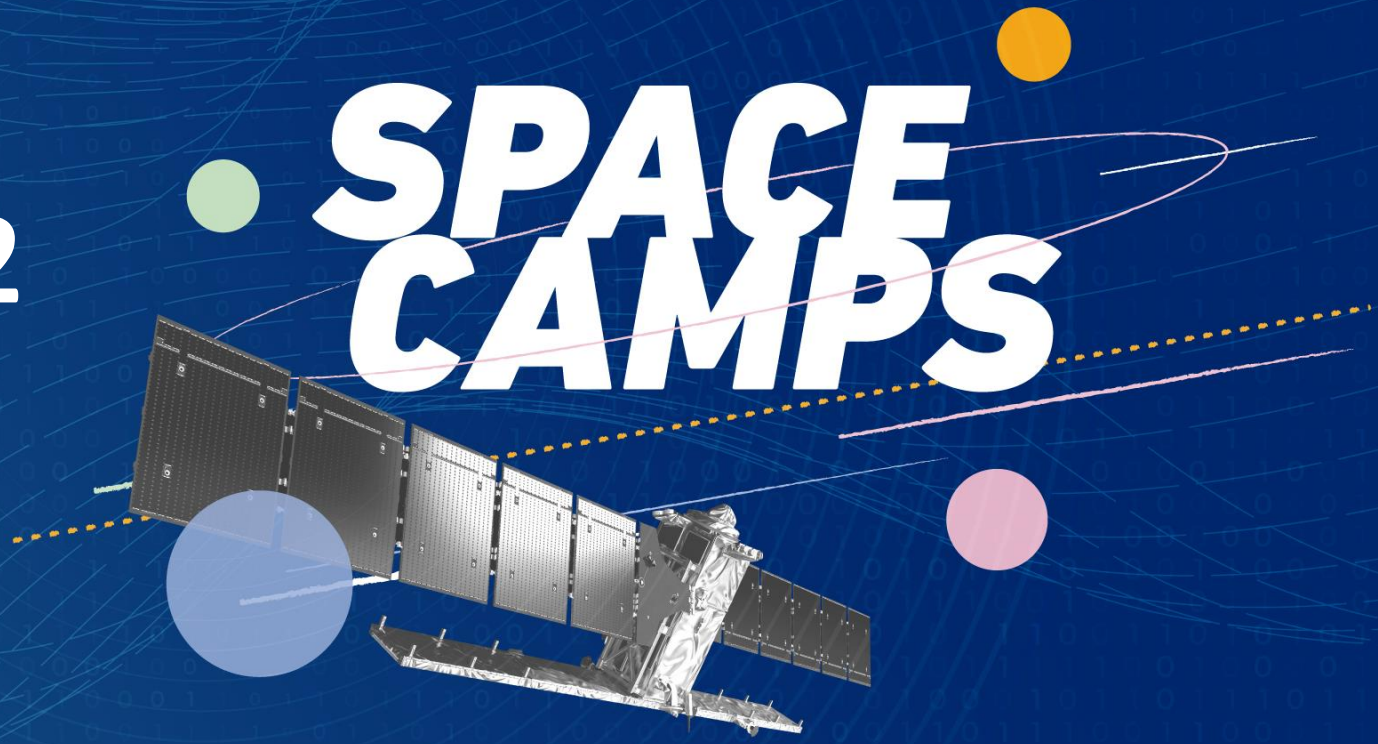
Your input is essential in crafting a truly dynamic,regionally relevant training experience.

- Shape mandatory submodules by innovative learning methods
- Suggest new submodules and help the young students get a good **introduction to the space industry!**

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Training Module 2

Use of space on Earth & practical use cases



Overview Training Module 2

2. Use of space on Earth & practical use cases

- 2.1 Presenting practical space-for-Earth use cases
- 2.2 Deep dive into sectoral applications
- 2.3 Problem definition: which challenges can be solved?
- 2.4 Geocaching: Space Treasure Hunt
- 2.5 EO imagery game
- 2.6 App API development related to EO game
- Local Organiser's suggestions

Mandatory | Final Event | Optional | LO suggestions

Training Module 2: Use of space on Earth & practical use cases

Module description

This module encompasses all activities that relate to **downstream space and its benefits for earth**. Practical space-for-earth use cases in different sectors such as 'saving the planet, environmental protection & sustainability', 'agriculture, forestry, natural resources' and 'maritime and ocean monitoring' will be demonstrated. Real-life case studies will show how space technologies can be used. The goal is also to show the use of the EU Space Programmes.

Learning Objectives

- Understand the intersection of space technology and Earth-focused solutions.
- Explore practical space-for-Earth use cases across different sectors
- Recognize the role and contributions of EU Space Programmes
- Apply space technology to real-world challenges

Proposed Learning Methods

- Training
- Workshop
- Game
- Excursion

Mandatory sub-modules

2.1 Presenting practical space-for-Earth use cases

In this introductory submodule, an overview will be provided on how space technologies, also related to the EU Space Programme, can be used to solve real world challenges. Local organisers are provided with different sectoral options. **(provided in detail) VR/ AR tech may be provided.**

2.2 Deep dive into sectoral applications

In this submodule, **Local organisers do a deep dive on their chosen sectoral applications**. They may ideally choose a sector that is highly relevant to their local context. Local organisers are welcome to propose innovative methods on how they plan to do a deep dive on demonstrating the applications. Local Organisers are invited to host several deep dives at the same time to ensure participants' interests are accommodated.

Final Event

2.3 Problem definition: which challenges can be solved

In this submodule, students will work to **brainstorm and define specific problems that can be addressed using space data**.

Optional sub-modules

2.4 Geocaching: Space Treasure Hunt

In this geocaching game, players work in teams to find hidden geocaches using GNSS-enabled devices and satellite data. At each cache, they solve puzzles or challenges tied to real-world applications of Earth Observation (EO) and GNSS, such as analyzing satellite imagery. They can use GNSS enabled app to navigate with precise coordinates.

2.5 EO Imagery Game

In this game, you can guide students to analyse Earth Observation pictures and let them determine the complexity of their creation., with educated guesses.

2.6 API App Development for EO

In this workshop, students will be introduced to Earth Observation (EO) data and basic API development by creating a simple web app that fetches and displays satellite imagery.

Submodule 2.1: Presenting practical space-for-Earth use cases

Mandatory

Module 2. Use of space on Earth & practical use cases

Content description

In this introductory submodule, an overview will be provided on how space technologies, also related to the EU Space Programme, can be used to solve real world challenges. Local organisers are provided with different sectoral options:

- Agriculture
- Maritime
- Aviation and drones
- Urban development
- Automotive and mobility
- Forestry and natural resources
- Mining and energy
- ESG reporting
- Climate services

The Local Organisers are **required to do an overview of all relevant applications**. It is encouraged to give a little more emphasis on markets that are highly relevant to the **local context** of your space camp.

Learning objectives

- Understand the intersection of space technology and Earth-focused solutions
- Understand the applications of space technologies in innovating and addressing the challenges in multiple sectors

Learning Methods

Multimedia presentation with interactive quiz

You may use VR/ AR to teach students space applications concepts

Submodule 2.2: Deep dive into sectoral applications

Mandatory

Module 2. Use of space on Earth & practical use cases

Content description

In this submodule, **Local Organisers do a deep dive on their chosen sectoral applications**.

Look at the following pages for inspiration on the different sectors and adapt to your regional context!

They may ideally choose sectors that are highly relevant to their local context. Local organisers are welcome to propose innovative methods on how they plan to do a deep dive on demonstrating the applications.

Local Organisers are invited to host several deep dives at the same time to ensure participants interests are accommodated. The participants may then choose which ones they want to watch.

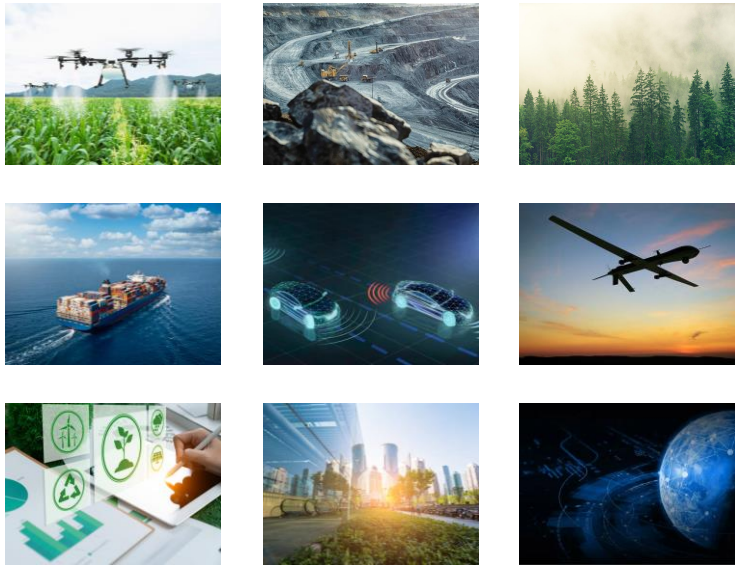
Learning objectives

- Learn how satellite data is used in specific sectors through case studies
- Learning how we can use space technology to solve real-world challenges

Learning Methods

Real-life case studies from the different sectors to enable students to brainstorm

You may use VR/ AR to teach students space applications concepts



Submodule 2.2: Deep dive into sectoral applications

Use cases in agriculture



Guide the students to examine the intersection of space technologies and agriculture, focusing on how satellite-based Earth Observation and GNSS technologies are revolutionizing the agricultural sector. From crop monitoring to precision farming, space technologies are transforming the way farmers manage resources, increase yields, and make data-driven decisions.

Participants will explore the practical applications of space-based tools that can drive more efficient, sustainable, and productive agricultural practices.

The main concepts presented include:

- **Precision Agriculture Using Satellite Data:** Learn how Earth Observation (EO) satellites monitor crop health, soil moisture, and pest infestations, leading to more effective resource management and better yields.
- **GNSS for Precision Farming:** Discover the importance of GNSS systems like Galileo and EGNOS for precision farming, including field mapping, automated equipment, and improving irrigation systems.
- **Climate-Smart Agriculture:** Explore how space technologies help farmers adapt to climate change by providing real-time data for weather forecasting, drought monitoring, and pest control.
- **Sustainable Agriculture with Space Technologies:** Understand how space-based solutions are key to optimizing land use, minimizing chemical inputs, and improving water management.

Submodule 2.2: Deep dive into sectoral applications

Use cases in maritime



Teach your students what are the applications of space technologies in the maritime sector, highlighting the role of the EU Space Programme in improving maritime operations, safety, and sustainability. From maritime navigation to tracking environmental changes, space-based solutions provide critical insights into the world's oceans and waterways.

Participants will explore how Earth Observation (EO), GNSS, and other space technologies are transforming maritime safety, fleet management, and environmental monitoring.

The main concepts presented include:

- **Satellite Navigation for Maritime Safety:** Learn how GNSS systems like Galileo support maritime navigation, improving accuracy and safety for vessels.
- **Marine Environmental Monitoring with EO:** Discover how Earth Observation solutions are used to monitor ocean temperatures, sea levels, and marine pollution.
- **Maritime Domain Awareness (MDA):** Understand the role of space technologies in improving surveillance, anti-piracy efforts, and maritime traffic monitoring.
- **Sustainable Shipping & Green Ports:** Explore how space technologies are facilitating the transition to more sustainable shipping practices and the development of eco-friendly ports.

Submodule 2.2: Deep dive into sectoral applications

Use cases in aviation and drones



Gain an overview of the EU Space Programme's relevance to aviation and drones. Explore the capabilities of GNSS in enhancing aviation and drone operations.

This lesson on 'Aviation and Drones' is designed to equip learners with the knowledge and skills to understand and apply the latest technologies in the field.

The main concepts that will be presented include:

- **EGNSS and Copernicus current usage:** Understand the current applications of EGNSS and Copernicus in aviation and drone operations.
- **Monitoring aviation emissions:** Learn about the increased focus on monitoring aviation emissions and the role of GNSS in this process.
- **Sustainable and smart mobility - Green airports:** Discover the concept of green airports and how sustainable and smart mobility is being promoted.
- **Urban Air Mobility (UAM):** Learn about the emerging field of Urban Air Mobility and how drones are being used in urban environments.

Submodule 2.2: Deep dive into sectoral applications

Use cases in urban development and smart cities



Explore the intersection of the EU Space Programme with urban development, focusing on climate-neutral cities and the role of the EU Space Programme. Delve into Earth Observation (EO) applications for urban greening and the contribution of GNSS to smart cities.

This lesson on 'Urban Development' is designed to equip learners with the knowledge and skills to understand and apply the latest technologies in the field.

The main concepts that will be presented include:

- **Climate-Neutral Cities and Space Technologies:** Learn how space technologies can enable our cities to become climate-neutral
- **Multi-dimensional cadastre:** Explore the concept of multi-dimensional **cadastre and its relevance in urban development**
- **GNSS-based mapping for smarter cities:** Discover how GNSS-based mapping can contribute to the development of smarter cities
- **Urban greening with EO solutions:** Learn about the role of EO solutions in urban greening initiatives

Submodule 2.2: Deep dive into sectoral applications

Use cases in automotive, mobility, and transportation systems



Examine the profound impact of the EU Space Programme on the automotive sector and mobility. It provides a comprehensive overview of space technologies for autonomous driving and sustainable mobility. You will gain valuable insights from experts who are shaping the mobility landscape.

Mobility is an integral part of our daily lives, and this course focuses on the Road and Automotive market applications, which include services and products offered to and consumed by the automotive industry.

The main concepts that will be presented include:

- **Mobility challenges:** Understand the current issues and obstacles in the mobility sector.
- **EGNOS and Galileo:** Learn how these two major European satellite navigation systems contribute to smarter and more sustainable mobility.
- **EU Space Programme and sustainable mobility:** Discover how the EU Space Programme can help create more sustainable mobility and transport efficiency.
- **Space technologies and autonomous driving:** Explore the significant contribution of space technologies to autonomous driving.

Submodule 2.2: Deep dive into sectoral applications

Use cases in forestry and natural resources



Forestry is a vital sector that plays a crucial role in the economy and the environment. This lesson aims to provide you with a comprehensive understanding of the forestry sector, its challenges, and the latest space technological advancements that are being used to address them.

The main concepts that will be presented include:

- **Forestry challenges:** Understand the current issues and obstacles in the forestry sector
- **Securing sustainable timber supply chains:** Learn about the importance of sustainable timber supply chains and how they can be secured
- **EO for forest carbon monitoring:** Explore the use of Earth Observation (EO) technology for forest carbon monitoring
- **Battling the increased and more extreme occurrence of forest fires:** Learn about the latest techniques and space technologies that are being used to battle the increased and more extreme occurrence of forest fires

Submodule 2.2: Deep dive into several applications

Use cases in mining and energy



Explore how space technologies enhance resource management, monitoring, and sustainability in the mining and energy sectors. Satellite-based Earth Observation (EO) and GNSS technologies are transforming how resources are located, extracted, and managed, helping to improve operational efficiency while reducing environmental impact. Space solutions also support monitoring emissions, tracking resource supply chains, and ensuring regulatory compliance.

The main concepts that will be presented include:

- **Satellite Applications for Resource Exploration:** Learn how Earth Observation satellites assist in mineral exploration, mapping, and assessing resource availability.
- **GNSS for Mining and Energy Operations:** Discover how GNSS systems like Galileo enable efficient resource management, transportation logistics, and site monitoring in remote areas.
- **Energy Monitoring and Optimization with Space Technologies:** Explore how EO and GNSS are used to monitor energy production, including monitoring renewable energy sources like wind and solar farms.
- **Sustainable Practices in Mining with Space Data:** Understand how space technologies monitor environmental impacts, reduce waste, and help improve sustainability in mining operations.

Submodule 2.2: Deep dive into sectoral applications

Use cases in environmental protection and sustainability



Understand the EU Space Programme's role in sustainability, climate services, exploring space tech applications for climate change monitoring, forecasting, and mitigation. Gain insights from experts that are developing climate solutions. And protecting the environment. Dive also into Environmental, Social, and Governance (ESG) considerations. You will gain valuable insights from startups (e.g. GlobeEye) that are at the forefront of this field.

The main concepts that will be presented include:

- **Global climate and environment-related trends:** Understand how global climate and environment-related trends and policies are driving and generating demand for EO data and applications.
- **Earth's Digital Twin and the Destination Earth Initiative:** Learn about the ultimate sustainability project – Earth's Digital Twin and the Destination Earth initiative.
- **Integration of AI in climate-related applications:** Discover how the integration of AI is increasing the quality of climate-related applications.
- **Space Technologies and Supply Chains:** Learn how space technologies can be used in monitoring supply chains to ensure ethical and sustainable practices.
- **Space data and ESG reporting:** Discover the use of space data to fill the gaps of data for comprehensive and accurate ESG reporting

Submodule 2.3: Problem definition – which challenges can be solved?

Module 2. Use of space on Earth & practical use cases

Content description

In this submodule, students will work to **brainstorm and define specific problems that can be addressed using space data**.

By focusing on real-world challenges such as climate change, disaster management, or sustainable agriculture, they will use the space data from the previous module to better understand these issues. Students will identify key questions and challenges that could be solved or mitigated using satellite data, helping them transition from theory to practical application.

This phase will encourage creativity and critical thinking, **as students begin formulating ideas for potential business solutions that could emerge** from the data and the challenges defined.

The business idea formation is coming up in Module 3! The challenges defined here feed into the business idea creation! In principle: When they understand **what is possible** with the available data, then they can understand **how to effectively use it**.

Learning objectives

- Learn how to define a real-world problem that could be solved with space data
- Understand the importance of clearly identifying a problem before developing a solution
- Develop skills to break down complex challenges into manageable components using space data
- Begin conceptualizing solutions that leverage space technologies for practical, Earth-based applications

Learning Methods

- Use online tools and real time examples to guide students through the process of accessing and interpreting satellite data
- Provide students with specific datasets (e.g., satellite images, weather data) and task them with analysing the data patterns in small groups
- Engage in discussions about how they could use EU space data to solve similar challenges in different sectors

Submodule 2.4: Geocaching – Space Treasure Hunt

Optional

Module 2. Use of space on Earth & practical use cases

Content description

In this geocaching game, players work in teams to find hidden geocaches using GNSS-enabled devices and satellite data. At each cache, they solve puzzles or challenges tied to real-world applications of Earth Observation (EO) and GNSS, such as analyzing satellite imagery. Solving the riddle unlocks information about the coordinates of the next geocache. They can use a GPS device or mobile app app to navigate with the coordinates.

Learning objectives

- Develop skills in interpreting satellite data to make informed climate-related observations

Learning Methods

Follow the game instruction and receive materials to make the game happen

Materials needed

- GNSS-enabled devices (e.g., smartphones, GPS units)
- Printed imagery/ maps in pre-hidden geocaches (containers, logs, small puzzles, or clues)
- Challenges (puzzle sheets, EO-related tasks)
- Writing tools (pens/ pencils)



Submodule 2.5: EO Imagery Game

Optional

Module 2. Use of space on Earth & practical use cases

Content description

In this game, you can guide students to analyse Earth Observation pictures and let them determine the complexity of their creation.

Players are presented with EO images of varying complexity and tasked with identifying the features, understanding the **technology used to capture them**, and analyzing the processes involved. Challenges include matching images to their resolutions, determining the type of sensors used, and deciphering clues about data processing techniques like atmospheric corrections and georeferencing.

Prerequisite: You have already presented the various sensors and data processing techniques in previous submodules.

Complexity levels:

- **Basic**: Single-band imagery with minimal processing (e.g. grayscale satellite images)
- **Moderate**: Multispectral imagery with atmospheric corrections and georeferencing
- **Advanced**: Multitemporal, hyperspectral, or synthetic aperture radar (SAR) data requiring sophisticated processing and AI models

Learning objectives

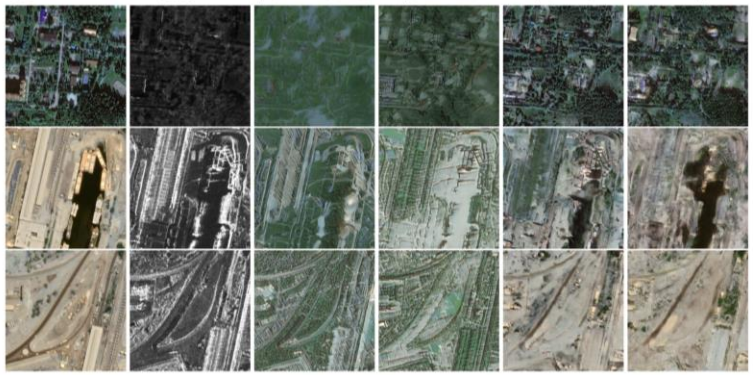
- Understand the technology and methods behind satellite imagery creation
- Differentiate between types of EO data, such as multispectral, hyperspectral, and radar imagery
- Develop skills in analysing image features and identifying the complexity of processing steps

Learning Methods

Follow the game instruction and receive materials to make the game happen

Materials needed

- Printed satellite imagery with various resolutions, data processing techniques, data acquisition techniques etc.



Submodule 2.6: App API development related to EO space

Optional

Module 2. Use of space on Earth & practical use cases

Content description

In this workshop, students will be introduced to Earth Observation (EO) data and basic API development by creating a simple web app that fetches and displays satellite imagery. The goal is to bridge the gap between raw space data and practical applications by helping students prototype a small **data-driven tool** that solves a real-world problem. The workshop will introduce basic **API concepts, data integration, and visualisation techniques**, while keeping it accessible for beginners.

- Understanding how space data is made available through **public APIs** (e.g., Copernicus OpenHub, Sentinel Hub, Open-Meteo for weather data)
- Learning the basics of **API calls** (fetching data, filtering, and displaying results)
- Designing a **simple web or mobile app** that presents space data in a meaningful way

Learning objectives

- Help students understand what an API is and how it can be used to access EO data
- Foster skills in programming, spatial analysis, and real-world applications of EO data

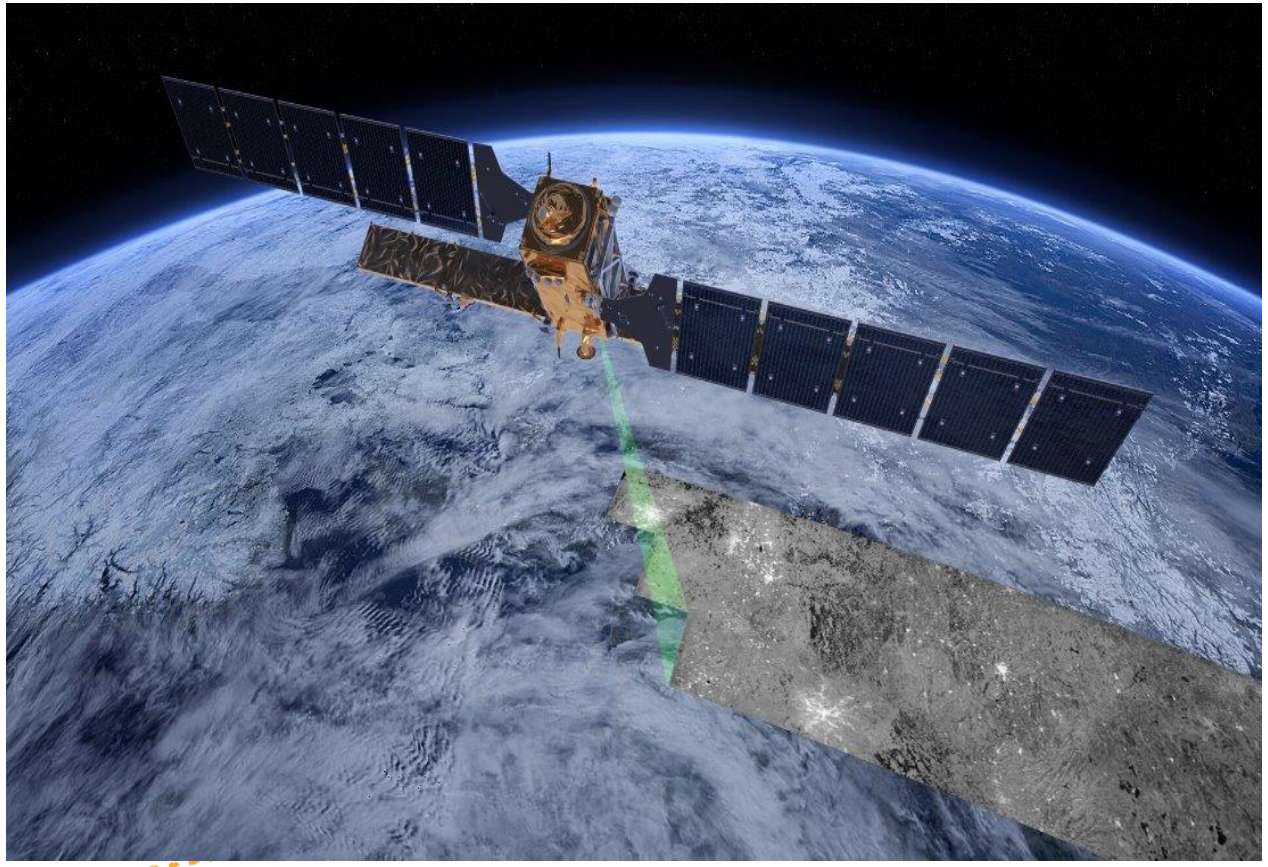
Learning Methods

Guided demo

Materials needed

- Laptops
- Basic coding templates

Your turn!



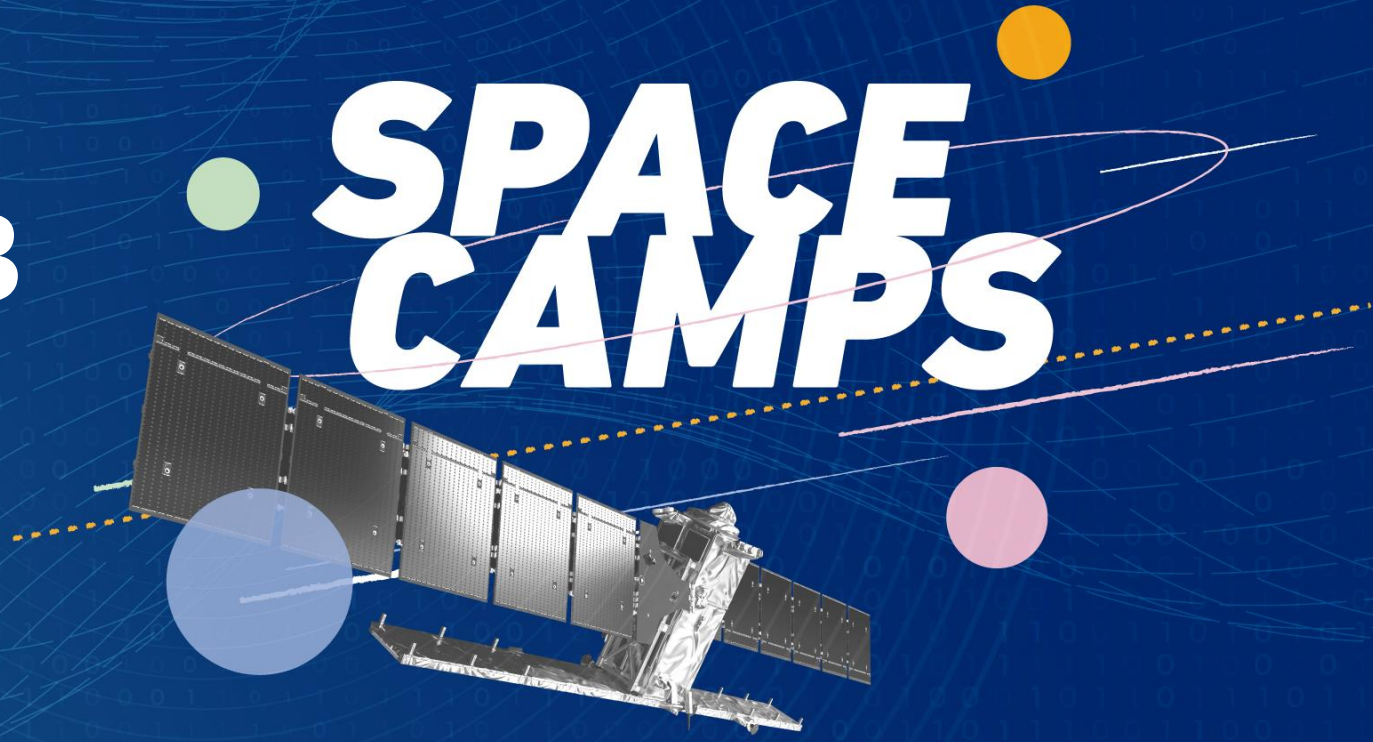
Your input is essential in crafting a truly dynamic, regionally relevant training experience.

- Shape mandatory submodules by innovative learning methods
- Suggest new submodules and help the young students understand how **Space** technologies can be used **for Earth!**

CASSINI #EUSpace
Space Camps

Training Module 3

Introduction to entrepreneurship for innovaton-driven enterprises



Overview Training Module 3

3. Introduction to entrepreneurship for innovaton-driven enterprises

- 3.1 A deep dive into space entrepreneurship
- 3.2 What makes a good team
- 3.3 Entrepreneurship crash course
- 3.4 Solution design
- 3.5 Understanding users & market
- 3.6 Team building activity
- 3.7 Pitch training
- 3.8 Critical thinking on data & information
- 3.9 Responsible use of LLMs
- 3.10 Financing your space solution
- Local Organiser's suggestions

Mandatory | Final Event | Optional | LO suggestions

Training Module 3: Introduction to entrepreneurship for innovaton-driven enterprises

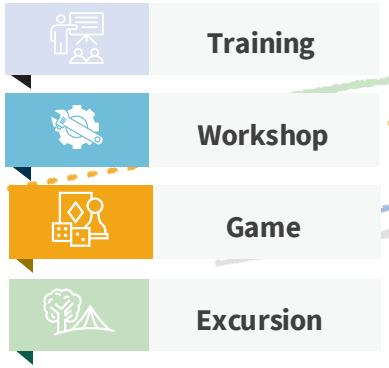
Module description

Introducing the **fundamentals of entrepreneurship** by exploring real-world downstream space applications. Building on insights from the 'Space-for-Earth' module, participants learn how to identify problems, develop innovative solutions, and create sustainable business models. Through a hands-on **design sprint process**, they quickly prototype and validate their ideas, gaining practical experience in turning concepts into viable opportunities.

Learning Objectives

- Understand the fundamentals of entrepreneurship and how they apply to the space industry
- Develop creative business ideas and solutions for space-related challenges
- Gain skills in creating business ideas and pitching to a group

Proposed Learning Methods



Mandatory sub-modules

3.1 A deep dive into space entrepreneurship

Students get familiar with how entrepreneurial concepts from the crash course relate to space businesses and analyze space technologies for their potential to solve real-world problems. Possible interconnections to Module 1.

3.2 What makes a good team

In this submodule, students will explore the essential elements of **effective teamwork**, not only in the context of project development but **also as it relates to career success and personal growth**

Final Event

3.3 Entrepreneurship crash course

This submodule introduces students to the fundamentals of entrepreneurship, providing a solid foundation for those new to the concept. It demystifies entrepreneurial jargon and focuses on the essential building blocks of starting a business.

3.4 Solution design

In this submodule, students will take their business ideas to the next level by exploring how to design a **Minimum Viable Product (MVP).**

Optional sub-modules

3.5 Understanding users & market

In this submodule, students will learn how to better understand the people and markets behind their business ideas.

3.6 Team Building Exercise

In this submodule, students will participate in an engaging team-building activity designed to **reinforce the principles of effective teamwork.**

3.7. Pitch training

This submodule equips students with the skills and confidence to effectively pitch their business ideas.

3.8. Critical thinking on data and information

This submodule fosters critical thinking skills by teaching students how to **analyse and interpret data with a critical lens**.

3.9. Responsible usage of LLMs

Prompt engineering workshop with emphasis on responsible usage

3.10 Financing your Space Solution

The session will introduce key concepts in space industry financing, including government funding, private investment, venture capital, and crowdfunding.

Submodule 3.1: A deep dive into space entrepreneurship

Mandatory

Module 3. Introduction to entrepreneurship

Content description

Students get familiar with how entrepreneurial concepts from the crash course relate to space businesses and analyze space technologies for their potential to solve real-world problems.

Possible interconnections to Module 1.

The lecturers choose 2-3 case studies related to sectors they chose in Module 2 to deep dive on. Lecturers present real-world examples to inspire students about disruptive space ventures. Students connect back to the basic entrepreneurship concepts they learnt in submodule 3.1. mapping the business model canvas to space ventures or building space-specific MVPs.

Business Model Canvas: Discuss how space startups solve unique problems on earth (value propositions), the related customer segments, revenue streams, key resources and partnerships.

MVP: What are the challenges of prototyping in space (high costs, technical complexity, higher amount of reliability testing) and give an overview of lean testing for space applications. Highlight some examples of space MVPs.

Navigating the space ecosystem: Hurdles for space entrepreneurship, licensing and national laws, funding opportunities, overview of suppliers and investors. (possible connection to Module 6)

Learning objectives

- Get familiar with how entrepreneurial concepts relate to space businesses
- Analyse space technologies for their potential to solve real-world problems

Learning Methods

Industry professionals share their experiences and insights on space entrepreneurship.

Deep dive into case studies of successful space ventures and business model canvas mapping to the ventures

Submodule 3.2: What makes a good team

Mandatory

Module 3. Introduction to entrepreneurship

Content description

In this submodule, students will explore the essential elements of **effective teamwork**, not only in the context of project development but also as it relates to career success and personal growth.

By understanding the dynamics of good teams, students will learn how to collaborate effectively, contribute to group goals, and manage conflicts constructively.

Additionally, the lesson will dive into **the psychology of team roles**, focusing on **how different personalities and skills contribute to overall success**. Through self-reflection and practical exercises, students will recognize their strengths and weaknesses as team members and learn how to adapt in various professional environments, whether in space-related projects or broader career contexts.

Here we want to carry out an interactive workshop engages participants in a team-based problem-solving challenge that emphasizes key principles of effective teamwork. Participants will take on specific roles and work collaboratively to complete a multi-faceted task. The activity is designed to demonstrate the importance of **communication, role clarity, leveraging strengths, and adaptability**.

Learning objectives

- Understand the key characteristics of successful teams and how they function
- Identify different team roles and how to leverage diverse skills and personalities for optimal performance
- Learn how psychological factors, such as motivation, communication styles, and conflict resolution, impact teamwork

Learning Methods

Team-based activity exploring how different skillsets and skills contribute to overall success

Materials needed

- Local organisers to choose a regional specific challenge/ situation – could be from any sector, at any level of complexity.

Submodule 3.3: Entrepreneurship crash course

Module 3. Introduction to entrepreneurship

Content description

This submodule introduces students to the fundamentals of entrepreneurship, providing a solid foundation for those new to the concept. It demystifies entrepreneurial jargon and focuses on the essential building blocks of starting a business. Among the key topics covered are:

- **What is entrepreneurship?** Definition, examples, and its significance in problem-solving
- **Business strategy:** How to pitch your venture, the market component, achieving substantial revenue and grabbing the momentum
- **Business model:** The components of a business canvas and interactive case studies
- **Marketing and sales:** How to build a marketing strategy & plan, B2B, customers & pricing, customers & sales
- **How to build a minimum viable product:** Highlight case studies and where to start building
- **Understanding the design process:** from ideation to prototyping
- **How to build a successful team and allocate resources:** key factors of success

Learning objectives

- Get familiar with basic entrepreneurial concepts
- Get introduced to the concepts of business strategy and business models

Learning Methods

- Expert / entrepreneur talk
- Multimedia presentation with interactive quiz
- Design a game that teaches students these concepts by roleplaying
- Visits to universities or companies that can give a crash course

Submodule 3.4: Solution design

Module 3. Introduction to entrepreneurship

Content description

In this submodule, students will take their business ideas to the next level by exploring how to design a **Minimum Viable Product (MVP)**.

They will learn the concept of **Technology Readiness Levels (TRLs)** to evaluate the feasibility and development stage of their solutions. The workshop emphasizes practical strategies to turn ideas into tangible prototypes, focusing on lean and iterative development. Students will leave with a clear understanding of how to plan for early-stage solution development.

Depending on the Local Organiser's capacity, students can either explore the MVP on a theoretical level, or try to develop a simple dashboard, mobile app or code that fetches and processes satellite data.

Learning objectives

- Learn how to develop an MVP to validate business ideas
- Understand Technology Readiness Levels (TRLs) and their role in product development
- Explore lean development principles to build cost-effective, functional prototypes
- Create a roadmap for advancing from concept to a deployable solution

Learning Methods

Prototyping and road-mapping exercise

Submodule 3.5: Understanding users & market

Optional

Module 3. Introduction to entrepreneurship

Content description

In this submodule, students will learn how to better understand the people and markets behind their business ideas.

They will explore **introductory frameworks** such as customer segments, user personas, problem-solution fit, market sizing, and basic competitor analysis. The session introduces students to the **importance of identifying who their users are**, what problems they face, how current solutions address those problems, and where opportunities for innovation may exist. Students will also learn how early user research, such as interviews, surveys, and observation, can help validate assumptions before developing a product or service.

The submodule provides a foundation for later work on solution design, business models, and pitching.

Learning objectives

- Understand the difference between users, customers, and broader market stakeholders
- Learn how to define customer segments and create simple user personas
- Explore basic market analysis, including market size, trends, competitors, and alternatives
- Identify user needs, pain points, and assumptions that should be validated

Learning Methods

User persona exercise, problem-mapping activity, and introductory market analysis

Submodule 3.6: Team building activity

Optional

Module 3. Introduction to entrepreneurship

Content description

In this submodule, students will participate in an engaging team-building activity designed to **reinforce the principles of effective teamwork learned in Submodule 3.2**.

Through sports or game-based challenges, students will practice communication, problem-solving, leadership, and collaboration in a dynamic and fun environment. These activities will help students build trust, develop camaraderie, and understand how their individual contributions strengthen the team.

Example activities include: Lake Sailing, escape room, outdoor obstacle course, raft building, mountain hiking. Feel free to propose your own!

Learning objectives

- Practice teamwork and collaboration in a fun, high-energy setting
- Build trust and camaraderie among team members.

Learning Methods

Local Organisers choose one or more team-based activities for the students to engage in



Submodule 3.7: Pitch training

Optional

Module 3. Introduction to entrepreneurship

Content description

This submodule equips students with the skills and confidence to **effectively pitch their business ideas**. Students will learn the structure of a compelling pitch, including how to articulate their value proposition, showcase their use of EU space data, and highlight the market potential of their solution.

Through hands-on practice and constructive feedback, they will refine their delivery to captivate and persuade an audience of potential investors, stakeholders, or judges.

Learning objectives

- Understand the key components of a persuasive business pitch
- Develop storytelling skills and learn techniques for clear delivery
- Practice pitching in front of an audience and respond to questions with confidence

Learning Methods

Pitch workshop

Materials needed

- Computers or tablets for preparing pitch decks
- Projector and screen for presentations
- Pitch deck templates or examples
- Feedback forms or rubrics for evaluators



Submodule 3.8: Critical thinking on data & information

Optional

Module 3. Introduction to entrepreneurship

Content description

This submodule fosters critical thinking skills by teaching students how **to analyse and interpret data with a critical len**s. Students will explore the **potential biases in data collection, analysis, and presentation**, as well as **learn to identify misleading information**. They will also discuss **ethical considerations** and the responsible use of data in their projects.

Through hands-on activities and real-world examples, students will develop the ability to evaluate the quality and credibility of data, a skill essential for informed decision-making in entrepreneurship and beyond.

After discussing fundamental principles of data quality and ethics, the session culminates in a thought-provoking and fun "How to Lie Using Data" exercise. This activity encourages students to intentionally manipulate or misrepresent data to understand how misinformation is created.

Learning objectives

- Understand the sources and types of bias that can exist in data and information
- Develop skills to critically evaluate the quality, accuracy, and reliability of data
- Learn about ethical considerations and the responsible use of space data
- Enhance awareness of how data can be misrepresented or misused in different contexts

Learning Methods

Presentation of statistics concepts and a “How to lie with data” exercise

Materials needed

- Example datasets with potential biases or errors
- Case studies or news articles showing data misrepresentation
- Computers or tablets for data analysis exercises
- Ethical guidelines or principles for data use



Submodule 3.9: Responsible use of LLMs

Optional

Module 3. Introduction to entrepreneurship

Content description

This submodule explores the potential and limitations of using Large Language Models (LLMs) in innovation and entrepreneurship. Students will learn how to leverage LLMs effectively for tasks such as brainstorming, research, and communication while understanding the importance of maintaining their own creativity and critical thinking.

The session emphasises **the balance between utilizing AI tools and nurturing independent problem-solving skills** to ensure that **reliance on LLMs enhances, rather than diminishes, their intellectual development**.

Learning objectives

- Understand the capabilities and applications of LLMs in entrepreneurship and problem-solving
- Recognise ethical and practical limitations of LLMs, including biases and misinformation
- Identify the importance of maintaining independent creativity and critical thinking while using LLMs
- Develop strategies for the responsible and balanced use of LLMs in projects and daily work

Learning Methods

Prompt engineering workshop with emphasis on responsible usage

Materials needed

- Computers with access to LLMs (if possible, in a controlled environment)
- Example outputs from LLMs and techniques
- Scenario-based prompts for group discussions

Submodule 3.10: Financing your space solution

Optional

Module 3. Introduction to entrepreneurship

Content description

The session will introduce key concepts in space industry financing, including government funding, private investment, venture capital, and crowdfunding.

Turning a space-based idea into reality **requires funding**. Students will explore **different funding sources for space ventures**, understand the **investment landscape**, and learn how to **pitch their ideas effectively to attract funding**. The lecture will cover:

- The types of funding available for space projects (grants, VC funding, crowdfunding, government contracts)
- How startups and entrepreneurs secure investment and gain financial backing
- The role of public vs. private funding in space innovation
- Real-world case studies of startups and ESA/CASSINI funding programs.

Learning objectives

- Understand the different sources of funding for space ventures, including government grants, venture capital, private investment, and crowdfunding

Learning Methods

Expert talks / integration within another submodule about the space industry or entrepreneurship

Your turn!



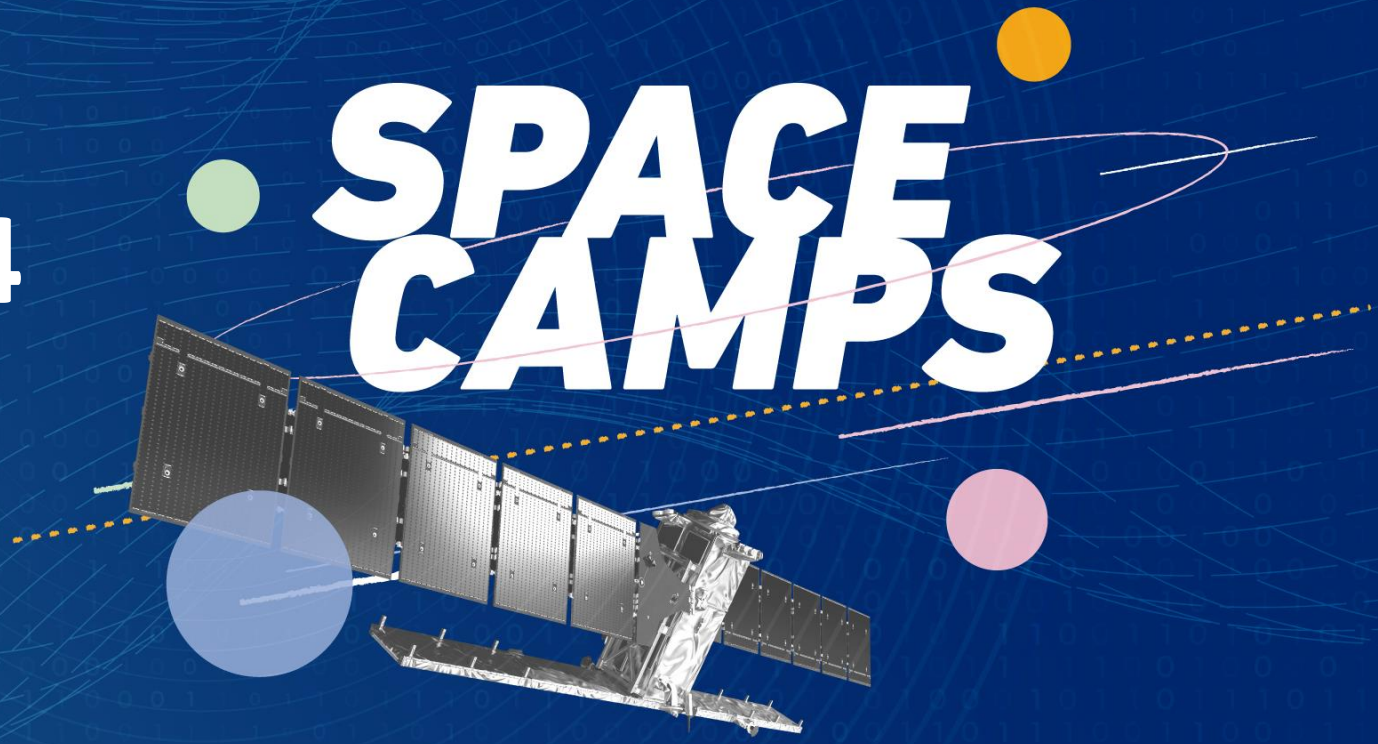
Your input is essential in crafting a truly dynamic, regionally relevant training experience.

- Shape mandatory submodules by innovative learning methods
- Suggest new submodules and help the young students understand how **to unlock their space entrepreneurship spirit** for the benefit of Earth!

CASSINI #EUSpace
Space Camps

Training Module 4

Introduction to the EU Space Programme components



Overview Training Module 4

4. Introduction to the EU Space Programme components

- 4.1 The EU Space Programme unpacked
- 4.2 Introduction to EU space data
- 4.3 Solving Earth challenges with EU space data
- 4.4 #EUSpace matchmaking: connect the dots!
- Local Organiser's suggestions

Mandatory | Final Event | Optional | LO suggestions

Training Module 4: Introduction to the EU Space Programme components

Module description

This module explores the EU Space Programme, focusing on its key initiatives: **Galileo** (global navigation), **Copernicus** (Earth observation), **IRIS²** (secure connectivity), **GOVSATCOM** (governmental satellite communications), and **SSA** (Space Situational Awareness). Participants will gain insight into the programme's structure, strategic goals, and the societal, economic, and scientific benefits it delivers across Europe and beyond.

Learning Objectives

- Learn about the impact of EU space programmes on global dynamics
- Describe the key EU space programmes (Galileo, IRIS², GOVSATCOM, Copernicus) and their strategic goals
- Explain how these initiatives deliver economic, scientific and societal benefits

Proposed Learning Methods

- Training
- Workshop
- Game
- Excursion

Mandatory sub-modules

4.1. The EU Space Programme unpacked

This submodule is a multimedia introduction to the key players and programmes in the European space sector. Participants will learn how key stakeholders (European Commission, ESA, EU Council, and national space agencies) cooperate to empower European space. An interactive lecture is foreseen with quizzes.

Final event

4.2 Introduction to EU space data

In this submodule, students will explore the wealth of space data provided by the European Union (EU) through its various space programs, such as Copernicus and Galileo.

4.3 Solving Earth challenges with EU space data

In this submodule, students will combine their knowledge of EU space data and entrepreneurship to brainstorm unique business ideas that address real-world Earth challenges. Using the Business Model Canvas as a framework.

Optional sub-modules

4.4 #EUSpace matchmaking: connect the dots!

In this game, students are engaged in a fun exercise to match EU space programmes (Galileo, Copernicus, IRIS², GOVSATCOM, SSA) to their core functions, key actors, and real-world applications. This activity addresses potential misconceptions and strengthens knowledge of the European space ecosystem in a fun, visual format.

Submodule 4.1: The EU Space Programme unpacked

Module

4. Introduction to EU Space Programme components

Content description

In this submodule, students will explore the role and global impact of the EU's flagship space programmes.

Specifically, this interactive session, students examine **Galileo, IRIS², GOVSATCOM, SSA and Copernicus**, highlighting their **strategic goals** for Europe, their implementing stakeholders, the public and private **collaborations** and their **main applications** for the benefit of society. Students will learn how these initiatives deliver economic growth, scientific progress, and societal benefits, such as improved disaster response, digital autonomy, and sustainable development.

Additionally, students will discover the collaborative dynamics of key stakeholders, including the European Commission, ESA, EUSPA, and national Agencies, and their governance to work together to strengthen Europe's position in space.

The submodule combines an **interactive lecture with quizzes and real-world examples** to bring the content to life and prepare the students to the gamified session.

Learning objectives

- Identify and describe the key EU space programmes and their strategic purposes
- Explain the economic, scientific, and societal benefits of these initiatives
- Outline how EU institutions, Agencies and private companies collaborate to advance Europe's space sector

Learning Methods

Multimedia presentation with interactive quiz

Submodule 4.2: Introduction to EU space data

Module

4. Introduction to EU Space Programme components

Content description

In this submodule, students will explore the wealth of space data provided by the European Union (EU) through its various space programs, such as Copernicus and Galileo.

The focus will be on the **accessibility and practical uses of this data**, especially in terms of how it can help address societal challenges.

Through hands-on examples, students will **understand how satellite data can be used** for applications of the sectors mentioned above.

The lesson will cover the **types of available datasets**, such as Earth observation imagery and satellite navigation data, and introduce basic tools for working with and interpreting this data.

Learning objectives

- Understand the types of space data available through EU space programs (e.g., Copernicus Earth Observation, Galileo navigation data)
- Recognise the practical applications of space data in addressing real-world challenges, from environmental issues to disaster response
- Learn basic techniques to interpret and visualize space data using accessible tools

Learning Methods

- Use online tools and real time examples to guide students through the process of accessing and interpreting satellite data
- Provide students with specific datasets (e.g., satellite images, weather data) and task them with analysing the data patterns in small groups
- Engage in discussions about how they could use EU space data to solve similar challenges in different sectors

Submodule 4.3: Solving Earth challenges with EU space data

Module

4. Introduction to EU Space Programme components

Content description

In this submodule, students will combine their knowledge of EU space data and entrepreneurship to brainstorm unique business ideas that address real-world Earth challenges. **Using the Business Model Canvas as a framework**, they will systematically map out the key elements of their business ideas, including value proposition, customer segments, and revenue streams.

The session emphasizes creativity, problem-solving, and entrepreneurial thinking, encouraging students to align their ideas with societal needs and market opportunities. By the end of this session, each team will have a well-defined business concept mapped out on a BMC.

Learning Methods

Business model canvas workshop

Learning objectives

- Generate innovative business ideas using EU space data
- Apply the Business Model Canvas to structure business concepts
- Identify value propositions, customer segments, and other key components of a business model
- Enhance teamwork and collaborative brainstorming skills

Submodule 4.4: #EUSpace matchmaking connect the dots

Optional

Module

4. Introduction to EU Space Programme components

Content description

Students are divided in five groups. Each group has a 2-minute timer to score the highest number of correct matchmaking combinations with Cards (e.g. Copernicus + Earth Observation + ESA + Climate monitoring). Points are allocated to teams for each justified correct combination.

Game rules:

Step 1: all cards are shown, explained and divided into categories. There are four categories of EU Space Programme Cards: Programme Cards (Galileo, Copernicus, IRIS², GOVSATCOM, SSA); Function Cards (Global navigation, Earth Observation, Secure connectivity, Government satellite communications, Space surveillance); Stakeholder Cards (European Commission, EUSPA, ESA, EU Member States, Private companies); Application Cards (Autonomous driving, Climate monitoring, Secure government communications, Disaster response, Avoiding satellite collisions, etc.) (10 mins)

Step 2: one group at a time has a 2-mins timer time to observe the cards, discuss, choose and note down its combinations (10-15 mins)

Step 3: each team presents its combinations to the instructors and classmates. The team with more Points wins, while common misconceptions are discussed in an interactive and cooperative way (10-15mins)

Learning objectives

- Add extra Points for extra Cards for each category, to make combinations more comprehensive
- Expand in a fun way student's understanding of EU Programme components Use a digital drag and drop tool (e.g. Miro board) to make the game more digital, while print your own
- Playing Cards to make it more interactive in-presence.

Learning Methods

Divide the students into small groups and let them choose their EU Space Programme combinations in a quick and fun way

Materials needed

- Playing Cards (5 categories)
- 2-minute timer



Your turn!



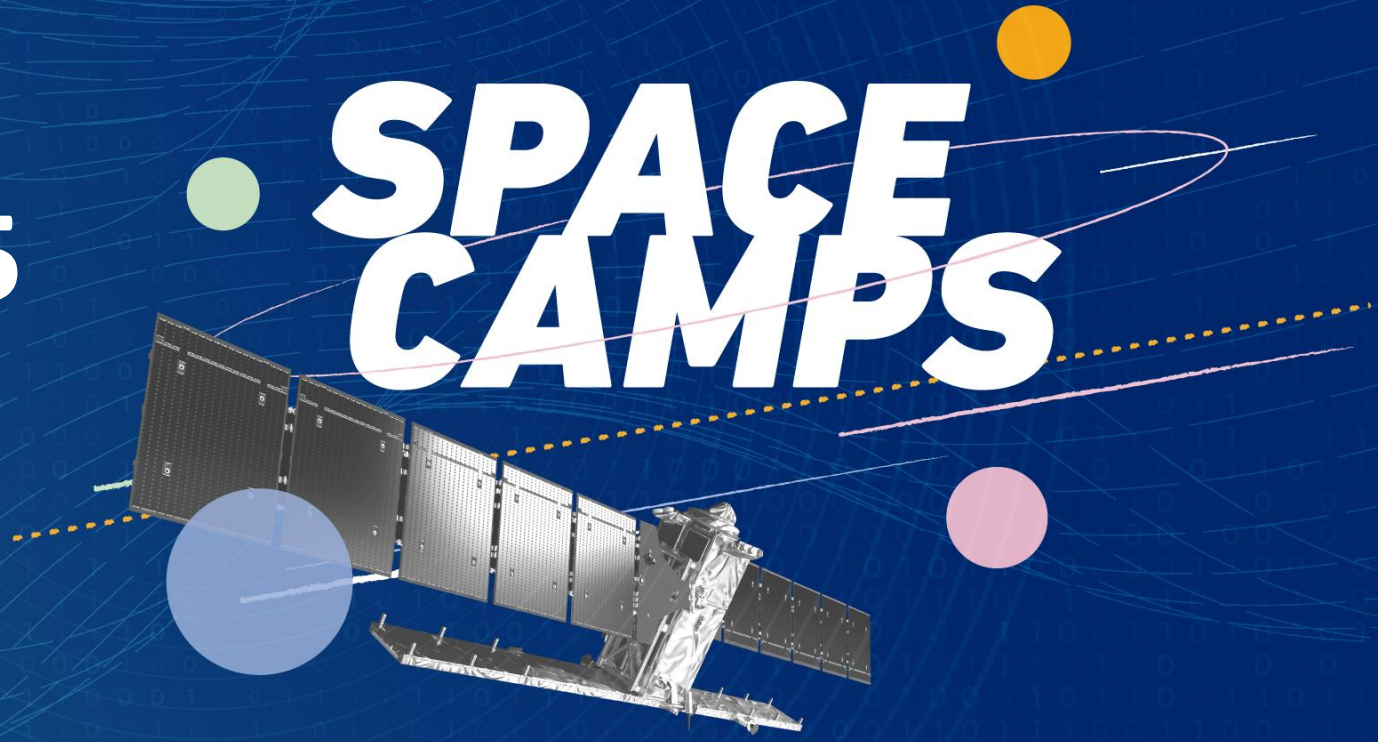
Your input is essential in crafting a truly dynamic, regionally relevant training experience.

- Shape mandatory submodules by innovative learning methods
- Suggest new submodules that will help students **discover the EU Space Programme components!**

CASSINI #EUSpace
Space Camps

Training Module 5

The emerging “New Space” industry



Overview Training Module 5

5. The emerging “New Space” industry

- 5.1 New Space Disruptors: Who’s changing the game?
- 5.2 The New Space Startup game
- 5.3 The New Space Investment game
- 5.4 Role play: public-private cooperation in motion
- Local Organiser’s suggestions

Mandatory | Final Event | Optional | LO suggestions

Training Module 5: The emerging “New Space” industry

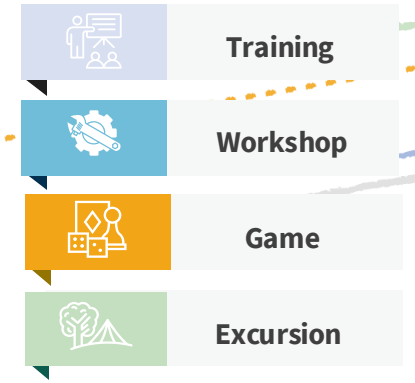
Module description

In this module the basics of the space economy are outlined and **New Space trends** are introduced. Participants will explore real-world examples of New Space ventures, analysing their benefits, challenges, and influence on established structures. Through investment case studies, students learn to evaluate the commercial potential of space ventures.

Learning Objectives

- Gain knowledge of the New Space economy
- Identify key New Space players and their innovative business models.
- Discover how new space ventures are changing the industry
- Evaluate the commercial viability of space ventures using investment case studies.

Proposed Learning Methods



Mandatory sub-modules

5.1 New Space Disruptors: Who’s Changing the Game?

In this submodule, students learn how new commercialisation trends transform the space economy in the New Space era (e.g. space tourism, EO services and applications, private LEO constellations, satellite broadband etc.). They learn about the New Space economy today, who are the main disruptors and how do they influence traditional sector dynamics.

Optional sub-modules

5.2 The New Space Startup Game

In this game, students take part in an engaging, interactive activity to revise and reinforce what they’ve learned in the lectures. Divided into groups, each team develops a start-up idea to pitch to the training experts, combining creativity, critical thinking, and fun to make the material truly memorable.

5.3 The New Space Investment Game

Students act as venture capitalists (VCs) or angel investors tasked with building a diversified New Space investment portfolio. They must evaluate real-world New Space ventures, allocate limited funding, and justify their choices to a panel of "expert investors" (instructors or guest experts).

5.4 Role play: public-private cooperation in motion

Innovation in the global space sector is brought forward through both public and private stakeholders, driving innovation through policies and market dynamics. In this role play game, students get direct exposure to challenges of private and public stakeholders and to the foundations for their cooperation.

Submodule 5.1: New Space Disruptors: Who's changing the game?

Mandatory

Module 5. The emerging "New Space" industry

Content description

In this training module, students will be introduced to industry examples and current New Space players. A series of key notes will introduce participants to the benefits and challenges of emerging New Space technologies and the influence it has on traditional space structures.

Present key concepts such as what is New Space, the paradigm shift it presents and the key players and trends of New Space.

Provide insights into the business philosophy and economic changes that underpin New Space and the opportunities presented by it.

Promote the ability of students to dive deep into different space commercialisation trends (e.g. space tourism, EO services and applications, private LEO constellations, satellite broadband etc.) and brainstorm on the possibilities that this new era brings forth.

The class should include professional representatives from the most innovative space companies in your local ecosystem.

Learning objectives

- Identify and understand opportunities presented by New Space, for various stakeholders
- Enable students to identify the main space commercialisation trends
- Prepare students to the optional gamified modules

Learning Methods

- New Space company representatives to give lecture about their experience
- Multimedia presentation with interactive quiz
- Design a game that teaches students these concepts by roleplaying
- Visits to universities or important institutions to learn the role they play in the industry

Submodule 5.2: The New Space Startup game

Optional

Module 5. The emerging “New Space” industry

Content description

In the New Space Startup Game, students are engaged in an interactive game to revise what they learned in submodule 5.1.

Game setup:

- Divide students into teams of 4-6. Each team represents a Startup
- Provide each team with a pre-made startup card, detailing their company's area (e.g., space tourism, satellite EO, asteroid mining) and engineering and value chain information
    - **Step 1**: Teams sign up on a game platform (e.g. Mentimeter, Kahoot) and compete to answer industry-related trivia questions to earn ‘funding’ points. (15 mins)
    - **Step 2**: Teams use their pre-made startup card to identify their mission to present to investors, identifying their target market and USP. Using ‘funding points’ they can buy guidance, data and partnerships. (15 mins)
    - **Step 3**: Teams pitch their startup business plan and USP to a panel of "investors” (instructors). They must pitch their startup outlining why they deserve funding that rate each pitch based on their thinking (30 mins)

Learning objectives

- Ensure that the Startup Cards detail sound value chain and engineering information
- Keep information from Submodule 5.1 digestible and interactive
- Combine creativity and critical thinking to make the material memorable

Learning Methods

Follow the game instruction and receive materials to make the game happen

Materials needed

- Startup Cards
- Quiz game platform setup
- Pitch template
- Investor table

Submodule 5.3: The New Space Investment game

Optional

Module 5. The emerging “New Space” industry

Content description

In the New Space Investment Game, students are engaged in an interactive game to revise what they learned in submodule 5.1.

Game setup:

- Divide students into teams of 4-6. Each team represents an Investor group
- Provide each team with a pre-made investor card, detailing their focus area (e.g., early-stage funding, space infrastructure, etc) and investment strategy preferences (e.g. risk, sector, deal size)
    - **Step 1**: Teams sign up on a game platform (e.g. Mentimeter, Kahoot) and compete to answer industry-related trivia questions to earn ‘capital’ points. (15 mins)
    - **Step 2**: Teams review pre-made startup card to evaluate potential investments. Using ‘capital points’ they can buy market data, expert advice, or partnerships. (15 mins)
    - **Step 3**: Teams present their investment choices and reasoning to a panel of ”board members” (instructors). Presentations should include expected returns, strategic benefits, and risk assessments (30 mins)

Learning objectives

- Ensure that the Investor Cards detail sound strategic and financial information
- Keep information from Submodule 5.1 digestible and interactive
- Combine creativity and critical thinking to make the material memorable

Learning Methods

Follow the game instruction and receive materials to make the game happen

Materials needed

- Investment Cards
- Quiz game platform setup
- Pitch template
- Investor table

Submodule 5.4: Role play: public-private cooperation in motion

Optional

Module 5. The emerging “New Space” industry

Content description

Game setup:

- **Step 1**: students are divided into public sector (EU/ESA) and private sector (New Space companies) teams and the instructors give the two groups their Objective Cards with key goals and Resource Cards with resources that each group can give out in negotiations.
- **Step 2**: students engage in negotiation rounds, where teams take turns proposing deals to each other (e.g. The public sector will invest more on heavy-launch technologies if the private sector allows for hosting facilitated training sessions for engineers at their premises) (20 mins)
- **Step 3**: each team presents their findings to the instructors. As no team can achieve objectives alone, they must show how they achieve their objectives through cooperation (20 mins)

The objectives are designed so that neither team can fully achieve their goals alone, mirroring real-world public-private dynamics in space. Examples of private goals are “Launching a commercial LEO constellation”, “Develop a reusable heavy-lift rocket”, while examples of public goals are “Ensure global broadband access”, “Train the next generation of space engineers”.

Learning objectives

- Ensure students experience the modus operandi of the private sector (maximisation of profit, of market share and innovation) and of the public sector (public good, scientific discovery and long-term sustainability).
- Ensure engineering relevance of New Space companies’ objectives and policy relevance of public sector’s objectives
- Develop critical thinking and argumentation skills while exploring space ethics

Learning Methods

Divide the students into two groups and let them brainstorm in a fun way about the topic before they present their arguments

Materials needed

- Objective cards
- Graphic material for brainstorming



Your turn!



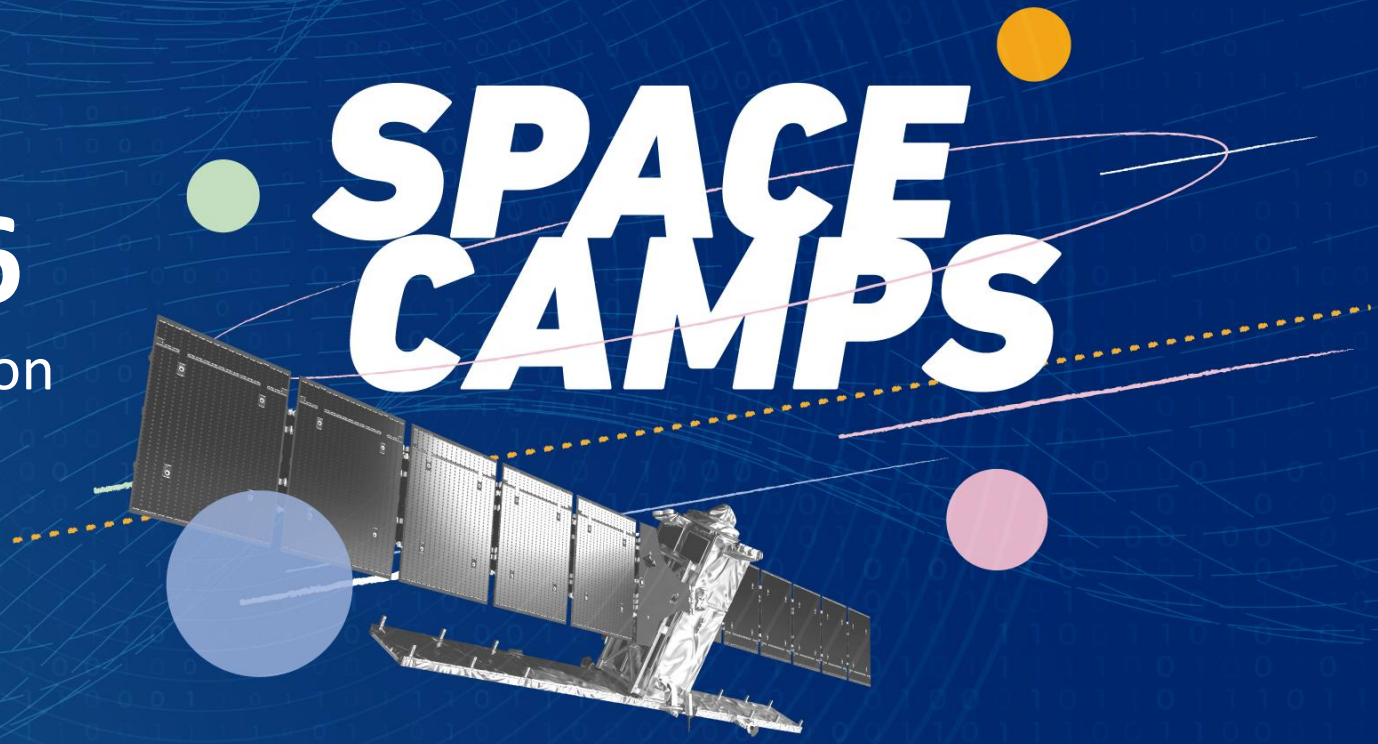
Your input is essential in crafting a truly dynamic, regionally relevant training experience.

- Shape mandatory submodules by innovative learning methods
- Suggest new submodules that will help students **learn about the New Space Industry!**

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Space Camps

Training Module 6

History and future of space exploration



Overview Training Module 6

6. History and future of space exploration

6.1 History of space exploration	6.2 Astronomy night	6.3 Planetarium / observatory visit	6.4 Design of mission proposal
6.5 Launch your rocket	6.6 Skywalk – space object tracking using apps	6.7 Exploring with the “Kerbal Space Programme” game	6.8 Build a LEGO moon / mars rover
6.9 Virtual reality exploration of space	6.10 Building a HAM radio ground station	6.11 On-the-air	Local Organiser’s suggestions

Mandatory | Final Event | Optional | LO suggestions

Training module 6: History and future of space exploration

Module description

This module takes participants on a journey through key milestones in space history while inspiring them to connect the past, present, and future of space exploration. Through real-time observation of celestial objects, engaging storytelling, and hands-on activities, the module fosters curiosity about the cosmos and encourages a deeper understanding of humanity's role in exploring the universe.

Learning Objectives

- Understand key milestones in space exploration history
- Inspire participants by connecting the history and future of space exploration with the real-time observation of celestial objects
- Foster curiosity about the cosmos through engaging storytelling and hands-on activities

Proposed Learning Methods

- Training
- Workshop
- Game
- Excursion

Mandatory sub-modules

6.1 Space exploration history

Local organisers are invited to propose innovative methods to help participants visualise the key milestones in space exploration history as well as the future of the EU in space exploration.

Optional sub-modules

6.2 Astronomy night

Stargazing excursion with telescopes or binoculars

6.3 Planetarium/ observatory

Guided tour in a planetarium or observatory

6.4 Design of mission proposal

Competition-format brainstorming in teams

6.5 Launch your rocket

Outdoor mini rocket workshop and launch

6.6. Skywalk

Stargazing excursion with applications

6.7 Kerbal Space Programme

Educational game night session

6.8 Build a LEGO rover

Introductory space-themed LEGO robotics workshop

6.9. VR Space Exploration

Students take turns on a VR headset to explore space, done throughout the day

6.10 HAM radio ground station

Assembly of HAM radio ground station, under licensed operator guidance

6.11. On-the-air

Coordinated communication with other space camps and teaches basics of radio

Submodule 6.1: History of space exploration

Mandatory

Module 6. History and future of space exploration

Content description

Local organisers are invited to propose innovative methods to help participants visualise the key milestones in space exploration history as well as the future of the EU in space exploration.

This could include VR/ AR exploration of space, the ISS, moon, mars etc.

This submodule starts with an introductory lecture on the history of space exploration. Learn about landmark missions like the Apollo Program, Mars rovers, and International Space Station (ISS). Participants may explore upcoming missions, including plans for a cis-lunar space station, Mars habitats, and robotic explorers. Include video screenings of important milestones of space exploration (e.g. moon landing/ mars rover/ cassini footage etc.) It is also acceptable to combine this with a 'documentary-style' video screening.

Space exploration activities of the EU are put in the spotlight.

Learning objectives

- Understand key milestones in space exploration history
- Understand the future of the EU in space exploration

Learning Methods

- Company/ institution representatives to give lecture about their experience
- Multimedia presentation with interactive quiz
- VR/ AR exploration of space
- Documentary screening

Submodule 6.2: Astronomy Night

Optional

Module 6. History and future of space exploration

Content description

The module for space exploration encourages a story-based learning approach. Astronomy is one of the best intercultural achievements of humanity, as it builds on scientific knowledge from the ancient times to the modern age.

Students will gather under the night sky to observe celestial objects using telescopes and other astronomy tools. This session will introduce them to stars, planets, and constellations, while also sparking discussions about the vastness of space and our place in the universe. A local astronomer or facilitator can guide the session, providing fascinating insights into the cosmos.

The Local Organisers should find an evening slot to combine an astronomy night using binoculars and telescopes, with a brief introduction lecture on the history of astronomy, cosmology and space exploration. Thus, we aim to inspire participants and sparking a lasting sense of wonder and ambition. Local Organisers will preferably choose dates where astronomical events are visible from the location.

Local Organisers may choose one or more nights to go on an outdoor night expedition with the participants.

Learning objectives

- Identify key celestial objects and constellations visible in the night sky
- Understand basic principles of observational astronomy, including how telescopes work
- Develop an appreciation for the beauty and scale of the universe

Learning Methods

Stargazing excursion with telescopes or binoculars

Materials needed

- Telescopes or binoculars (at least one per group or shared for the session)
- Star charts or apps for identifying constellations
- Laser pointers for guiding the group to specific stars and objects
- Outdoor location with limited light pollution



Submodule 6.3: Planetarium or observartory visit

Optional

Module 6. History and future of space exploration

Content description

Students will visit a planetarium or observatory to deepen their understanding of the universe through immersive, guided experiences.

At a planetarium, they can enjoy virtual sky tours and simulations of space exploration. If visiting an observatory, students will get a closer look at celestial objects through professional-grade telescopes and learn about ongoing research projects.

Local Organisers that have such facilities and activities in their disposal are encouraged to utilise them.

Learning objectives

- Experience the night sky in detail through advanced technology or professional telescopes
- Learn about ongoing scientific research in astronomy and space exploration
- Explore how observatories contribute to our understanding of the universe
- Gain insights into careers in astronomy and astrophysics

Learning Methods

Guided tour in a planetarium or observatory

Materials needed

- Custom tour at a local planetarium or observatory



Submodule 6.4: Design of mission proposal

Optional

Module 6. History and future of space exploration

Content description

Students are invited to do a workshop and competition on designing a mission proposal, for a future European space mission. You may choose space missions from different countries outside the EU and create a playful ‘space race’ setting of competition against these countries.

The challenge announcement will be: “You are now European innovators in the global space race. How will you design a mission that positions Europe as a leader in space exploration against flagship space programmes of other countries?”

The first to choose and present different mission focus to handout: Lunar Exploration, Mars Exploration, SSA, asteroid missions, human spaceflight, earth observation missions, satellite communication constellations etc.

Participants may be divided into group and compete against each other. They can be presented with the subject of the space missions and then instructed to come up with a proposal to present later during the day. In between they can engage in activities from other submodules and have some free time to rest and come up with solutions, refine their proposal, and prepare a presentation for a jury. Incusive awards are given such as “Most Innovative Proposal”, “Best Collaboration”, “Best Use of European Resources”, “Best Pitch” etc.

Learning objectives

- Understand the components of mission design, including scientific, technical, and collaborative aspects
- Foster creativity and strategic thinking within a global competitive context
- Build critical thinking and teamwork skills
- Gain insight into Europe’s role in the global space sector and its potential for leadership

Learning Methods

Brainstorming in teams with competition

Materials needed

- Mission brief template
- Creative supplies
- Rubric for evaluation
- Digital tools for presentation



Submodule 6.5: Launch your rocket

Optional

Module 6. History and future of space exploration

Content description

Students will get a mini rocket science workshop to delve into the world of rocket science by designing and building their own small-scale rocket models. This hands-on workshop introduces the basics of rocket science, such as propulsion, aerodynamics, and structural design, while fostering creativity and teamwork.

By constructing and testing their rockets, students will gain an appreciation for the challenges of launching payloads into space. The session culminates in a few fun and competitive launch event, where teams test their rockets and analyze performance.

Learning objectives

- Understand the fundamental principles of rocketry, including propulsion, aerodynamics, and payload capacity
- Apply problem-solving and engineering skills to design and build a functional model rocket
- Trigger the excitement of a working model rocket

Learning Methods

Mini rocket workshop and launch outdoors



Submodule 6.6: Skywalk – space object tracking using apps

Optional

Module 6. History and future of space exploration

Content description

This session uses user-friendly mobile apps like Heavens-Above and StarWalk to excite students about space object tracking.

Students will learn how to locate satellites, space stations, and celestial bodies in the night sky, understanding their trajectories and significance. This hands-on activity connects theoretical knowledge of space with practical tools, encouraging participants to explore the universe directly from their smartphones or tablets.

By the end of the workshop, students will have tracked satellites, identified celestial objects, and developed a deeper appreciation for the tools used by amateur and professional astronomers alike.

Learning objectives

- Understand how to use mobile applications to track satellites and celestial objects in real time
- Develop an appreciation for the accessibility of space science through modern technology

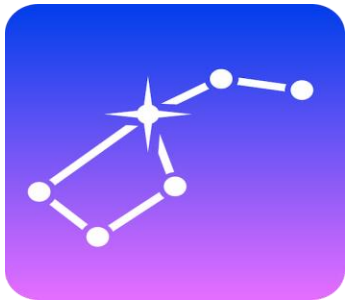
Learning Methods

Stargazing excursion with applications (can be combined with Astronomy Night)

Materials needed

- Smartphones or tablets with internet access
- Installed apps: **Heavens-Above** and **StarWalk** (free versions available).
- Outdoor area with minimal light pollution for direct sky observation





Submodule 6.7: Exploring with the ‘Kerbal Space Programme’ game

Optional

Module 6. History and future of space exploration

Content description

Game night!

In this exciting and playful session, participants will take the controls of Kerbal Space Program (KSP), a fun and immersive simulation game that lets you design, build, and launch your very own rockets. From crafting the perfect spacecraft to figuring out how not to crash on the Mun (Kerbin’s Moon), students will step into the shoes of a space engineer and mission planner.

The game features a pseudorealistic orbital physics engine, allowing for various real-life orbital maneuvers. Whether you’re launching satellites, setting up space stations, or bravely attempting to bring your Kerbal astronauts home in one piece, you’ll be solving problems, experimenting, and working as a team to conquer the final frontier.

Learning objectives

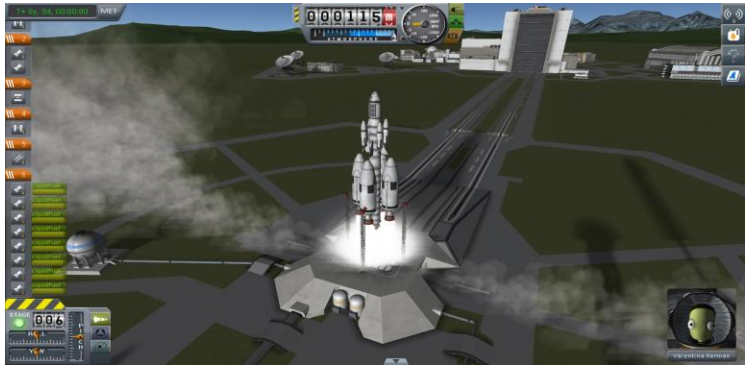
- Appreciate the challenges (and humor) of space exploration in a playful, low-pressure environment
- Discover the basics of rocket science, including propulsion, gravity, and orbital mechanics, through hands-on gameplay

Learning Methods

Educational game session

Materials needed

- Computers or laptops with Kerbal Space Program installed
- Projector or screen for a live demonstration of gameplay basics



Submodule 6.8: Build a LEGO moon / mars rover

Optional

Module 6. History and future of space exploration

Content description

Rovers are the eyes and ears of space exploration—they gather data, take pictures, and perform experiments in environments that are too dangerous for humans.

In this hands-on workshop, students will first receive a brief introduction to real-life Mars and Moon rovers, exploring key design elements like wheels, cameras, and scientific instruments. They will then break into teams and build their own rovers using Lego kits, focusing on creating functional mobility systems. After constructing their rovers, teams will test them by navigating an obstacle course simulating Martian or lunar terrain, overcoming challenges like craters and uneven surfaces.

Learning objectives

- Develop teamwork and problem-solving skills while building a functional and creative rover design
- Foster creativity and innovation in thinking about space exploration and engineering

Learning Methods

Introductory LEGO robotics workshop

Materials needed

- Lego rover building kits (including wheels, sensors, platform pieces, etc.)
- Pre-set obstacle course with materials to simulate Martian or lunar terrain (sand, rocks, ramps, etc.)
- Tape measure or ruler to measure rover travel distances

Submodule 6.9: VR space exploration

Optional

Module 6. History and future of space exploration

Content description

In this session, students will explore space using Virtual and Augmented Reality (VR/AR) technologies. They will experience immersive simulations that allow them to explore the surface of Mars, navigate through the International Space Station, and observe celestial bodies.

Using VR headsets or AR-enabled devices, students will engage with interactive space environments and gain insight into how these technologies are used in real-world space exploration, astronaut training, and mission planning. After the experience, participants will reflect on how VR and AR enhance our understanding of space and discuss their potential future applications in space exploration and education.

Check example experiences:

https://store.steampowered.com/app/953840/Apollo_11_VR_HD/

https://spaceengine.org/

Learning objectives

- Experience immersive, interactive space environments and learn about celestial bodies, spacecraft, and missions

Learning Methods

Students take turns on a VR headset to explore space, can be done throughout the day

Materials needed

- VR headsets
- Pre-installed VR space exploration apps (e.g., Apollo 11 VR, Space Engine etc.)
- Space for students to move around safely (if using VR headsets)



Submodule 6.10: Building a HAM radio ground station

Optional

Module 6. History and future of space exploration

Content description

In this workshop, students will learn the fundamentals of HAM (amateur) radio communication and gain hands-on experience building a ground station for space communication.

HAM radio has been a vital tool in space exploration, enabling communication with satellites and the International Space Station (ISS).

Participants will work together under supervision to **assemble their own HAM radio ground station**, learning how to connect antennas, set up receivers, and establish communication protocols. The session will cover the basic principles of radio waves, frequencies, and modulation techniques, with a focus on how amateur radio is used in space missions for both data transmission and personal communication. Once the stations are built, students will test their setups by attempting to m**ake contact with the ISS, other relaying the signal through HAM satellites**, bringing theory to practice.

Make sure the activity complies with local HAM radio regulations. If transmitting signals, a licensed HAM radio operator may need to supervise. Coordinate with a local HAM radio club for guidance, equipment support, or licensed operator participation.

Learning objectives

- Understand the basic principles of HAM radio communication, including radio waves, frequencies, and modulation
- Gain practical experience in setting up and operating a HAM radio ground station
- Learn about the use of HAM radio in space missions for communication with satellites and astronauts

Learning Methods

Assembly of HAM radio ground station, under licensed operator guidance

Materials needed

- HAM radio kits (transmitter, receiver, antenna, and cables)
- Tools for assembling the kits (screwdrivers, wire strippers)
- Computer with access to HAM radio frequency charts and communication software



Submodule 6.11: On-the-air

Optional

Module 6. History and future of space exploration

Content description

Note: This module has as a prerequisite that two or more camps are taking place simultaneously and coordinated time slots and access to frequencies for contacting other space camps.

In this interactive workshop, students will experience **real-time communication with other space camps around Europe using amateur radio**, just like the famous Jamboree on the Air (JOTA) event.

They will learn how to operate HAM radios and connect with other camp participants across various locations, exchanging messages and discussing space exploration. Using a portable amateur radio station, students will work together to communicate with other space camps, developing practical skills in satellite and radio communication. T

his activity will also introduce students to the global amateur radio community and its role in space missions and international collaboration. The session will emphasize teamwork, communication protocols, and the technical aspects of radio waves, frequencies, and signal transmission, all while connecting with peers across the globe.

Learning objectives

- Understand the basics of amateur radio operation, including frequencies, communication protocols, and signal propagation
- Gain hands-on experience in making contact with other space camps using HAM radio equipment
- Learn about the role of amateur radio in space exploration, communication with satellites, and space stations
- Develop communication skills by collaborating with other students

Learning Methods

Facilitator with experience in amateur radio coordinates communication with other space camps and teaches basics of radio

Materials needed

- Portable HAM radio station kits (transmitters, receivers, antennas, and cables)
- Computers or tablets for accessing radio communication software and logs (if applicable)
- Frequency charts and communication guidelines for operating within amateur radio bands



Your turn!



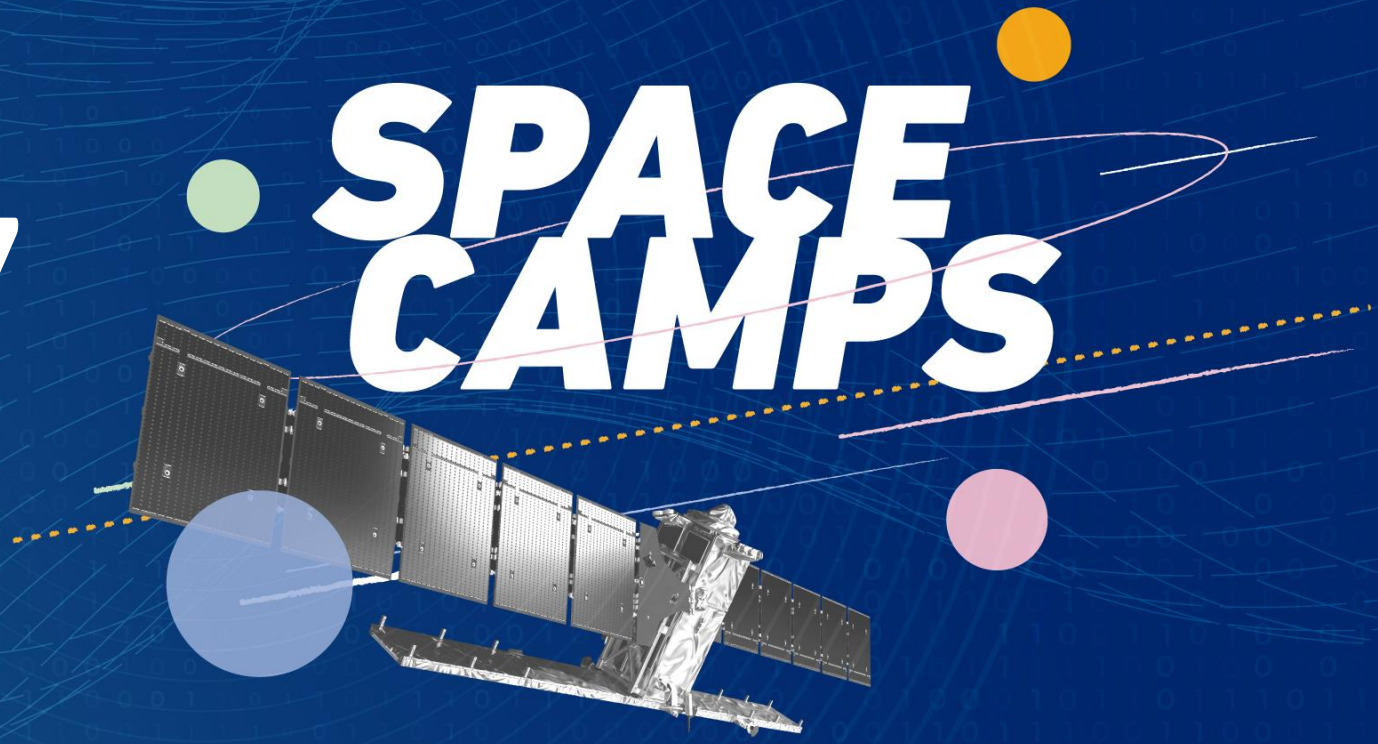
Your input is essential in crafting a truly dynamic, regionally relevant training experience.

- Shape mandatory submodules by innovative learning methods
- Suggest new submodules that will help students, **discover the wonders of space exploration!**

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Space Camps

Training Module 7

Imagining a career in space



Overview Training Module 7

7. Imagining a career in space

- 7.1 The Space Career Handbook
- 7.2 Space Talks: Beyond Astronauts
- 7.3 Space Markets & Technologies
- 7.4 Personal USP
- 7.5 Career Mentoring
- Local Organiser's suggestions

Mandatory | Final Event | Optional | LO suggestions

Training Module 7: Imagining a career in space

Module description

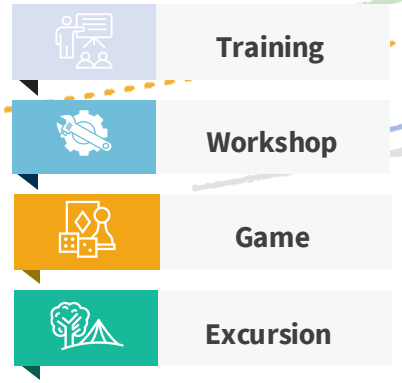
The aim is to inspire and guide students toward potential careers in the space industry. By showcasing role models and offering mentorship, it highlights the wide variety of opportunities, from engineering and science to business, policy, and beyond. Students will be gaining practical tools to shape their journey after finishing school. Through exposure to diverse careers, studies, and industry opportunities, the module equips participants to craft their own path in the dynamic world of space.

Learning Objectives

Discover the wide range of career opportunities in the space sector.

- Learn about educational pathways and skills needed for space-related jobs.
- Create a personalized career roadmap based on individual interests and goals
- Build confidence and motivation to pursue a career in space.

Proposed Learning Methods



Mandatory sub-modules

7.1 The Space Career Handbook

A physical 'Space Career Handbook' will be provided, to be printed and handed out to the participants during the workshop. The participants fill out the handbook with mentorship guidance.

Optional sub-modules

7.2 Space talks: Beyond astronauts

In this submodule, Local Organisers have the flexibility to choose external speakers to share their own stories and introduce the various space-related careers, including engineering, science, policy, business, and space systems design.

7.3 Space markets & technologies

The goal is to understand the different markets of the space industry and the different technologies.

7.4. Personal USP

Small guided activity, students will learn how to define what makes them valuable as professionals, build a personal brand, and effectively communicate their strengths to future employers or collaborators in their fields.

Submodule 7.1: The Space Career Handbook

Module 7. Imagining a career in space

Content description

We will provide a template for the '**Space Career Handbook**', to be printed and handed out to the participants during the workshop.

Through this template, you will introduce students to the diverse career opportunities within the space industry. The handbook will serve as a personal guide throughout their career exploration journey. The handbook includes sections on various space-related career paths, necessary skills, industry trends, and educational pathways. During the workshop, participants will fill out the handbook with personalized guidance from mentors, who will offer advice on career goals, skill development, and strategies for entering the space sector. This interactive session with **mentors** introducing students to possible careers in space helps them to take proactive steps toward shaping their future in the space industry.

The Handbook will be kept by the participants after the event and will be also available in a digital format.

Learning objectives

- Explore the multidisciplinary nature of the different career paths in the space industry
- Understand the key skills, qualifications, and training needed for a career in space
- Develop personalised career goals and a roadmap for achieving them Receive mentorship and guidance from expert mentors

Learning Methods

Hands-on career roadmap activity with provided template

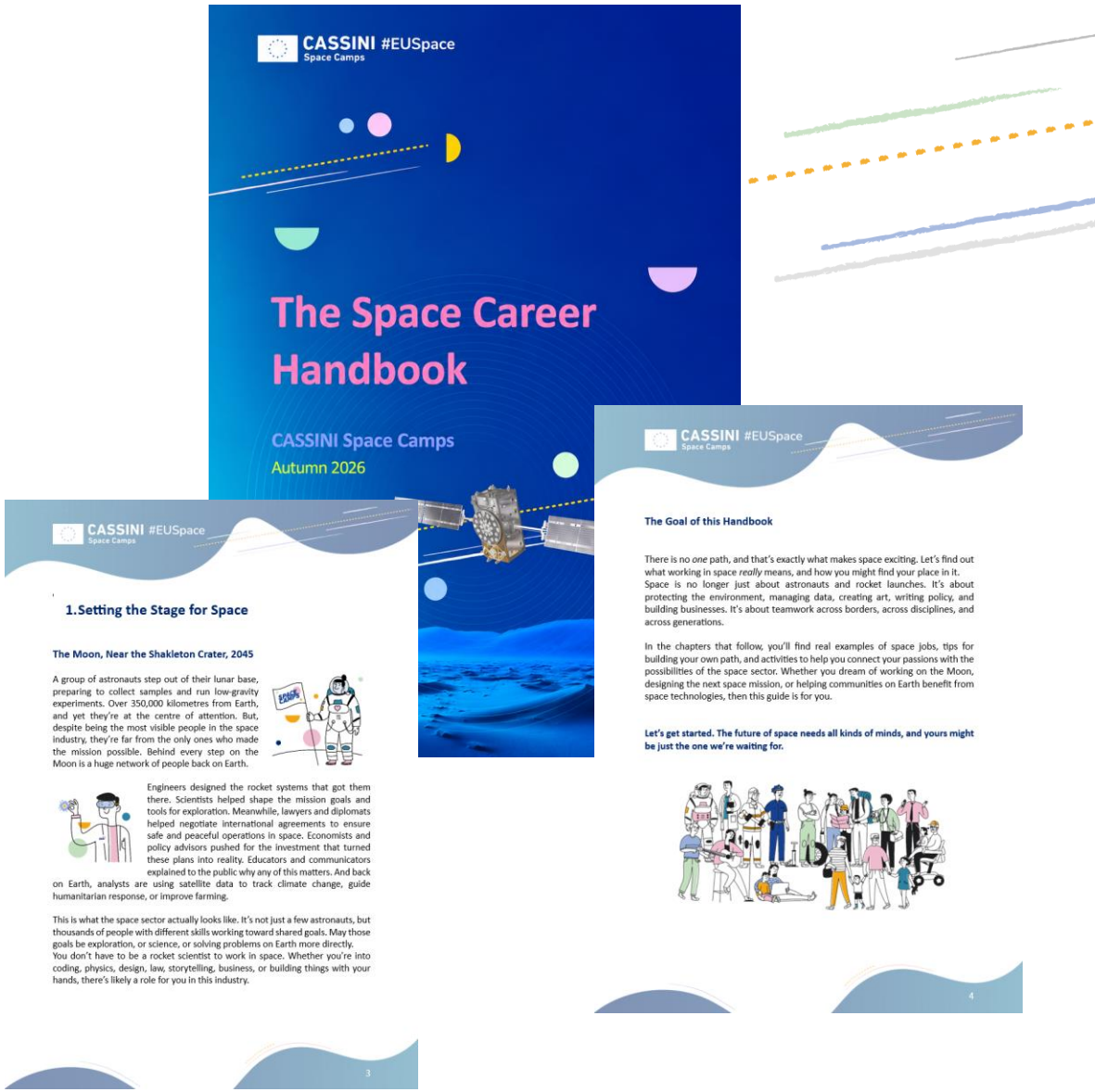
Materials needed

- The physical handbook given by us, printed and handed out to all students

Career Guide to Space: Space Career Handbook

- **Participants will receive a handbook about:**
  - The different kinds of careers in space
  - The steps to take to pursue them (both now and in the future)
  - The different communities and resources that are available to them

- **Including lists of local:**
  - Communities centered around space
  - Communicators (e.g. Youtubers, social media personalities, etc.)
  - Relevant initiatives that students can participate in (e.g. Hackathons, Model United Nations, etc.)



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Submodule 7.2: Space talks – beyond astronauts

Optional

Module 7. Imagining a career in space

Content description

In this submodule, Local Organisers may have the flexibility to choose how they will introduce the various space-related careers, including engineering, science, policy, business, and space systems design.

This offers students the opportunity to hear directly from real-life models in the space industry. Industry experts, astronauts, engineers, and entrepreneurs will share their personal journeys, experiences, and insights into working in the space sector.

These talks provide students with authentic perspectives on the challenges and rewards of space-related careers, offering inspiration and practical advice for pursuing careers in space exploration, technology, and business. By learning from real-life role models, students gain valuable insights into the skills, dedication, and resilience required to succeed in the field.

Learning objectives

- Gain firsthand insights into various careers within the space industry
- Understand the paths taken by industry professionals to reach their current positions
- Be inspired by the personal stories of success, overcoming obstacles, and driving innovation in space

Learning Methods

Expert Talks from real-life role models in the space sector



Submodule 7.3: Space markets and technologies

Module 7. Imagining a career in space

Content description

The goal in this submodule is to understand the different markets of the space industry and the different technologies.

We first start by asking the audience: “How do you think space affects our daily life?” and give relatable examples.

Markets: SatCom, Earth Observation, Space Exploration, Satellite Navigation, Launch and Space Logistics, Ground Segment, Security & Defence, Satellite Manufacturing, Space Situational Awareness, Next-Gen Space

Technologies: Launch Vehicles, Radars, Optical Sensors, the different satellite types, the different propulsion systems, space habitats, exploration technologies (from telescopes to rovers), power systems and energy storage, communication technologies.

Learning objectives

- Understand the primary markets and technologies in the space sector
- Identify how technologies support the needs of different markets
- Recognise the broad range of careers available in the space industry

Learning Methods

Multimedia presentation on the different markets and technologies of the space sector

Materials needed

- Multimedia presentation

Submodule 7.4: Personal USP

Optional

Module 7. Imagining a career in space

Content description

Submodule 4.4 focuses on helping students identify and develop their **Personal USP** (Unique Selling Proposition), **which is the unique combination of skills, experiences, and qualities that set them apart in their career**.

Through a small guided activity, students will learn how to define what makes them valuable as professionals, build a personal brand, and effectively communicate their strengths to future employers or collaborators in their fields.

Start by giving an overview of what is a Personal USP. You may use scenario-based examples with made up characters. Then you can prompt the students with a series of questions like: “What are three things you’re naturally good at?, “What do friends or teachers compliment you on?, “What problems do you love solving?”, “What’s a memorable achievement that made you proud?”, “What kind of role models do you look up to, what do they do?”. Help participants identify keywords in their answers and put them aside. Help students formulate sentences that summarise their unique strengths and connect it to future career paths.

This submodule may be a good warmup for Submodule 3.2. “What makes a good team”.

Learning objectives

- Understand what a USP is and why it’s important
- Identify their unique strengths, passions, and values and how this can guide them to their future

Learning Methods

Brainstorming game

Materials needed

- Pen and paper for the students to answer to the prompts

Submodule 7.5: Career Mentoring

Optional

Module 7. Imagining a career in space

Content description

This interactive mentoring session **connects participants with professionals** from different areas of the space sector, both in person and online.

Through short, rotating mentoring conversations, participants explore **career opportunities** in fields such as engineering, science, Earth Observation, space medicine, entrepreneurship, policy, education, research and business.Participants receive personalised career advice, learn about different professional pathways and identify the skills, qualifications and opportunities needed to pursue their interests.

The session aims to broaden career perspectives and support informed career planning, encouraging participants to **translate mentoring insights into practical next steps for their personal and professional development.**

Learning objectives

- Gain practical career advice from professionals across different space-related fields, explore diverse educational, professional and entrepreneurial pathways, develop confidence in asking questions and discussing career aspirations, and identify actionable insights and next steps to support personal career planning.

Learning Methods

Mentor marketplace: Connect participants with in-person and/or online professionals from diverse space-related fields.
Timed mentor rotations: Organise short conversations offering personalised career advice.
Guided questions: Encourage discussions on skills, education, career pathways and opportunities.
Reflection: Participants record key insights and actionable next steps for their career development.

Materials needed

- Mentor tables and station signs (for in-person sessions); a timed rotation schedule; prepared question prompts; reflection worksheets or career handbooks; screens, audio equipment and a stable internet connection for online or hybrid mentoring sessions.

Your turn!

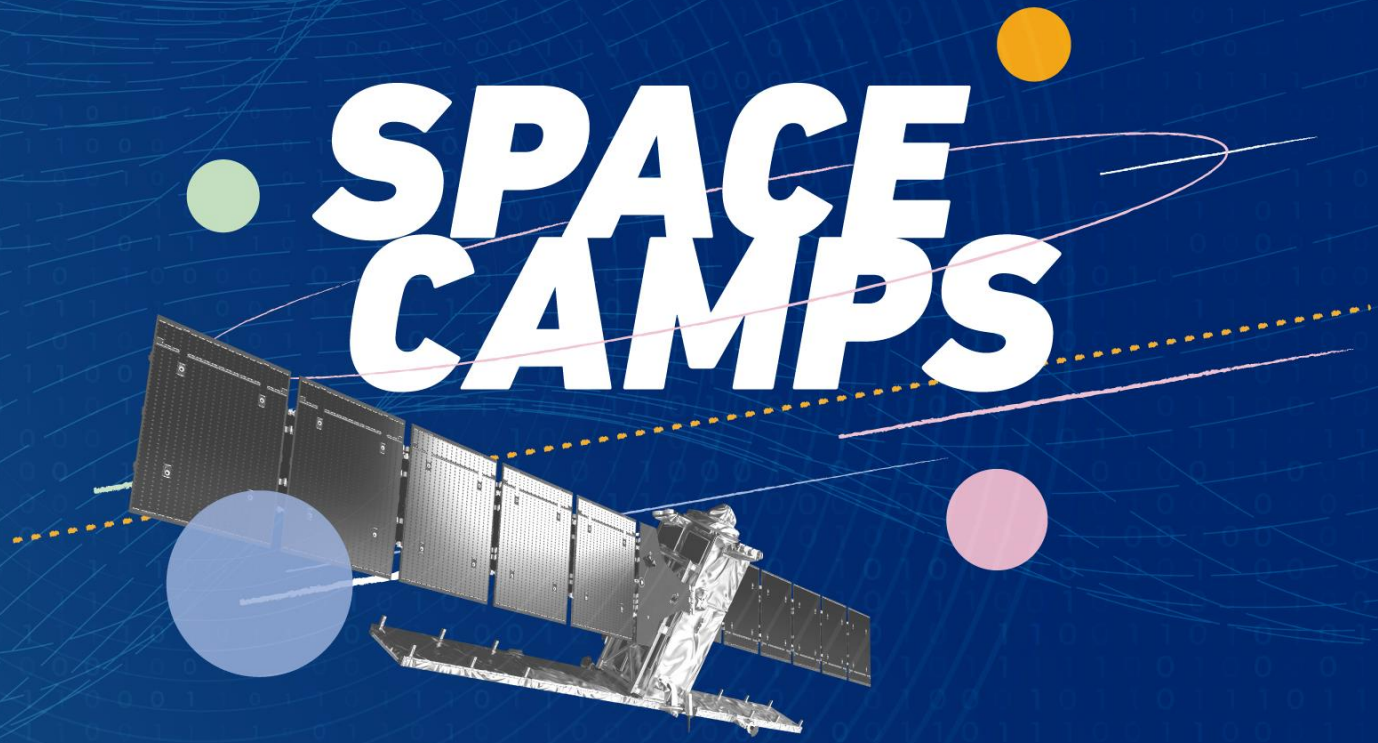


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- Suggest new submodules that will help students, **discover their career path to space!**

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Curricula Template



How to design your camp!

01

Open the day-by-day schedule (template available)

02

Place the sub-modules that are marked with **'Final Event'** in a logical order in the schedule, so that those **project-based activities** lead naturally to a final event on the last day.

03

Collect all the **mandatory submodules** and place them in the schedule.

04

For each mandatory submodule, propose a **method of delivery**. Think of your existing facilities, experts and resources. The **requirement** is that the workshop, training, game or excursion you will design fulfils the learning objectives.

05

For the remaining time you can pick and choose from any of the **optional submodules** you find interesting and place them in the schedule at your convenience. Alternatively, **you can add your own activities** that are not included in this document.

Note: It must be ensured that academic curricula stand in balance with spare time activities

You can find the curricula template on the website

CASSINI Space Camps - Training Guideline

Module Number	Module Name	Treatment
1	**Introduction to the space industry – structure, specificities, capabilities**	
1.1	Who is who in space?	Mandatory
1.2	The space value chain 101	Mandatory
1.3	Icebreaker: What do you actually know about space?	Optional
1.4	Science Slam	Optional
1.5	Tackling space challenges	Optional
1.6	Space dual-use: Treaties & critical thinking	Optional
2	**Use of space on Earth & practical use cases**	
2.1	Presenting practical space-for-earth use cases	Mandatory
2.2	Deep Dive into sectoral applications	Mandatory
2.3	Problem Definition: Which challenges can be solved?	Final Event
2.4	Geocaching: Space Treasure Hunt	Optional
2.5	EO Imagery Game	Optional
2.6	App API Development related to EO space	Optional
3	**Introduction to entrepreneurship for innovation-driven enterprises**	
3.1	A deep dive into Space Entrepreneurship	Mandatory
3.2	What makes a good team	Mandatory
3.3	Entrepreneurship crash course	Final Event
3.4	Solution Design	Final Event
3.5	Understanding users & market	Optional
3.6	Team building activity	Optional
3.7	Pitch training	Optional
3.8	Critical thinking on data & information	Optional
3.9	Responsible use of LLM	Optional
3.10	Financing your space solution	Optional
4	**Introduction to the EU Space Programme components**	
4.1	The EU Space Programme unpacked	Mandatory
4.2	Introduction to EU Space data	Final Event
4.3	Solving earth challenges with EU Space data	Final Event
4.4	#EUSpace matchmaking: connect the dots!	Optional
5	**The emerging 'New Space' industry**	
5.1	New Space Disruptors: Who's Changing the Game?	Mandatory
5.2	The New Space Startup game	Optional
5.3	The New Space Investment game	Optional
5.4	Role play: public-private cooperation in motion	Optional
6	**History and future of space exploration**	
6.1	History of Space Exploration	Mandatory
6.2	Astronomy Night	Optional
6.3	Planetarium/ Observatory Visit	Optional
6.4	Design of mission proposal	Optional
6.5	Launch your rocket	Optional
6.6	Skywalk - Space object tracking using apps	Optional
6.7	Exploring with the 'Kerbal Space Programme' game	Optional
6.8	Build a LEGO moon/ mars rover	Optional
6.9	Virtual Reality Exploration of Space	Optional
6.10	Building a HAM radio ground station	Optional
6.11	On-the-Air	Optional
7	**Imagining a career in space**	
7.1	The Space Career Handbook	Mandatory
7.2	Space Talks: Beyond Astronauts	Optional
7.3	Space Markets & Technologies	Optional
7.4	Personal USP	Optional
7.5	Career Mentoring	Optional

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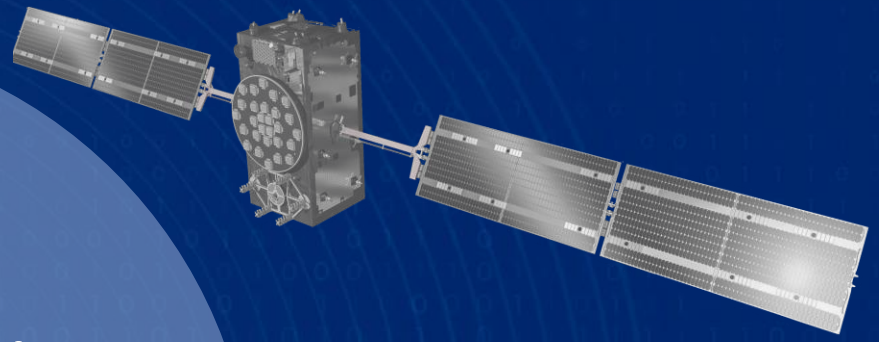
Curriculum template for Local Organisers

Note: You can add or remove days and add new items but do keep the structure of the sheet!

Your local camp should last 7-10 days. Please fill the days you are planning to host the camp.
Integrate the mandatory and final event modules from the training guidelines (see sheet 'Training Guidelines').
Feel free to include optional sub-modules from the training guidelines.
Add your own sub-modules that you would like to include in your local camp and/or other activities that you propose.

Day 1	Day 2
Mandatory Submodules (number and name) [see sheet 'Training Guideline']	
Optional Submodules (number and name) [see sheet 'Training Guideline']	
Your proposed sub-modules (in relation to the 6 training modules)	
Other activities (description)	

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If you have any questions
please contact

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