AGH

Faculty of Space Technologies

AGH University of Krakow

UNIVERSEH

Launch Your Career into Space

at the

FACULTY OF SPACE TECHNOLOGIES

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ABOUT THE FACULTY OF SPACE TECHNOLOGIES

The Faculty of Space Technologies at AGH University of Krakow is the first faculty in Poland fully dedicated to space technologies and space engineering. We responded to the rapidly growing global space sector and started preparing experts who will shape its future.

Our programmes combine solid theoretical foundations with hands-on experience in key areas of the modern (space) engineering, such as satellite systems, propulsion, aerospace materials, remote sensing, robotics, and biomedical technologies for space missions.

Students work on real projects, use modern laboratories, and collaborate with industry and international partners.

UNIVERSEH

We are a part of UNIVERSEH: European Space University for Earth and Humanity. It is an alliance of seven European universities, active since 2021, focused on advancing education and collaboration in the space sector. The project brings together institutions from across Europe, including partners from France, Germany, Poland, Sweden, Spain, Luxembourg, and Belgium.

UNIVERSEH offers a range of opportunities for students and staff, including:

- mobility programs across partner universities
- joint academic courses
- short-term schools and summer programs at partner institutions
- initiatives promoting sustainability and inclusion

UNIVERSEH

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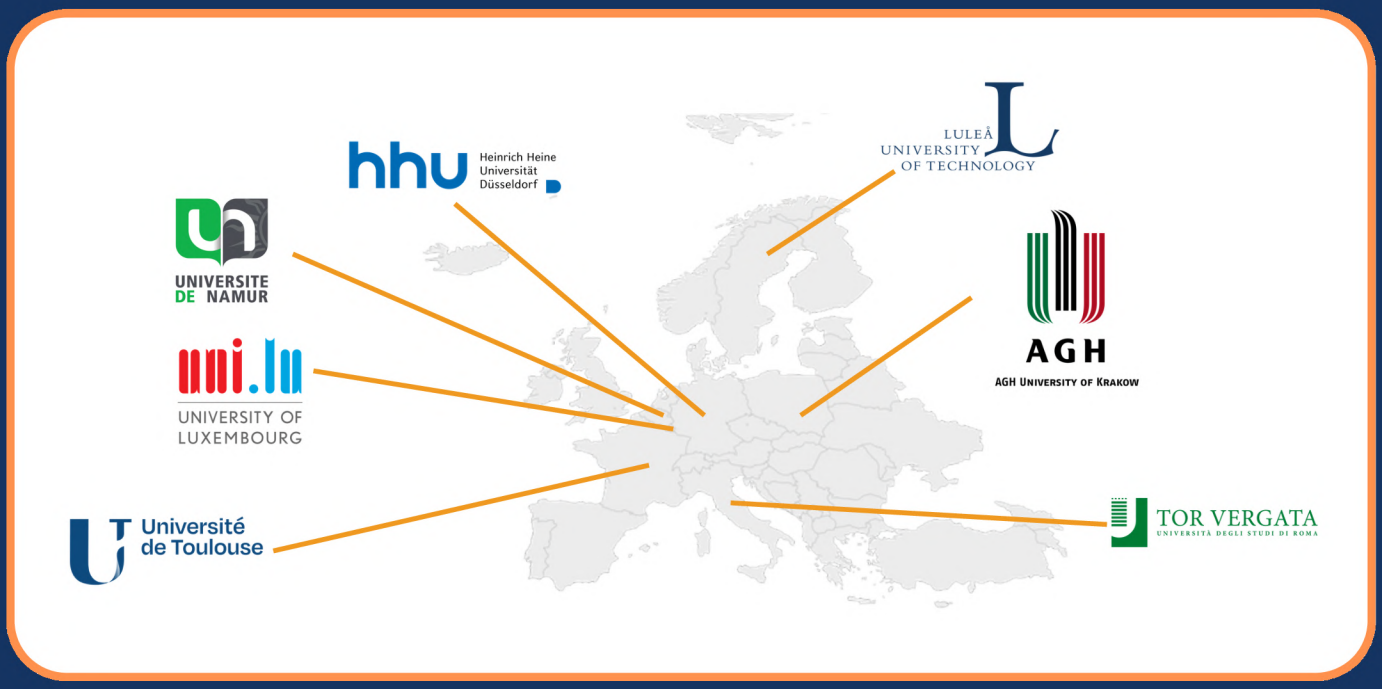


STUDY PROGRAMMES

We offer three levels of higher education:

- Bachelor's degree: **Space Engineering**
- Master's degree: **Space Technologies**
- **Doctoral School** with scholarship opportunities

Our programmes are designed as an integrated educational path, allowing students to develop their skills from fundamental engineering knowledge to advanced research and innovation.

INDUSTRY COLLABORATION

Close cooperation with technology companies and space sector partners provides:

- access to real-world projects
- internship and career opportunities
- direct insight into industry expectations

Regular "Meet the Company" events allow students to get to know companies operating on the market and learn about their activities and career opportunities.

INTERNATIONAL & PRACTICAL APPROACH

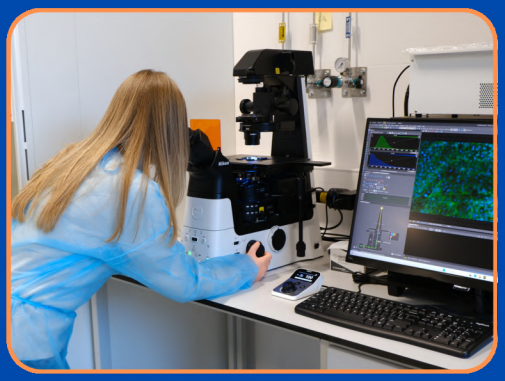
We help students build global competencies and a professional network from the start.

- Programmes conducted entirely in English
- Courses delivered by AGH faculty and international experts
- Insights from real space missions and advanced technological projects
- Strong links with industry and space institutions
- Training in soft skills and entrepreneurship
- Focus on responsible and sustainable engineering

CAREER OPPORTUNITIES

Graduates of our programmes are prepared to work in:

- autonomous systems and robotics
- advanced data science and AI
- research institutions and RnD
- aerospace industries
- satellite and spacecraft development
- space medicine and biotechnology



The interdisciplinary profile also opens doors to a wide range of deep-tech sectors.

STUDENTS COLLABORATION

The Faculty hosts 10 space-related student research groups, where students actively engage in ambitious, real-world projects.

Their areas of interest include:

- designing and building satellites
- lunar exploration and robotics
- materials for space missions
- astrobiology
- Earth observation
- laser and radio communications
- software development for the space sector
- space propulsion
- social aspects of space exploration

This project-based environment allows students to gain practical experience by working on real technologies and challenges from the space sector. Learning is based on doing, testing, and building real solutions.

THREE LEVELS OF HIGHER EDUCATION

Bachelor's Degree – Space Engineering

What makes it stand out:

- core engineering skills in mechanics, electronics, and software systems
- practical, project-based learning with real hardware, testing, and system integration
- critical thinking for designing reliable and complex engineering solutions
- transferable skills applicable to industrial needs

What students gain:

- advanced space-ready engineering expertise
- skills aligned with industry needs
- hands-on real engineering projects
- exposure to space sector ecosystem

Engineering Master's Degree - Space Technologies

For those who want to work at the forefront of the space sector, we offer **two Master's specializations.**

Our graduates are prepared to engineer robust systems that perform under the most demanding conditions in modern technology.

UPSTREAM

Focuses on the technologies and systems used in the design, construction, and operation of spacecraft. Students will learn about orbital mechanics, spacecraft engineering, and onboard systems, gaining the skills necessary to work on the development and testing of space technologies.

DOWNSTREAM

Concentrates on the processing and analysis of data from space missions. The curriculum includes signal processing, remote sensing, and space imagery analysis, as well as the use of machine learning in space applications. Graduates of this path will be prepared to manage and analyze data obtained from space.

photo: FilipKazek, KSAF AGH

Preparatory Zero Semester

A dedicated introductory semester for candidates with non-engineering bachelor's degrees. It enables students to build a strong foundation in mathematics, physics, chemistry, and engineering, ensuring a smooth transition into the Master's programme, including the Upstream and Downstream specializations.

Biotechnology of Extreme Environments (coming soon)

Dedicated to those interested in the impact of space on human health and life support technologies in space environments. The program will cover space biology and medicine, as well as biomedical engineering, preparing students to work on life-support systems in space.

Doctoral School

Doctoral programmes with scholarship opportunities, enabling participation in cutting-edge, interdisciplinary research in space technologies and related fields.

PhD candidates at the Faculty work on advanced topics addressing key challenges of future space missions, including:

- lunar habitat concepts using 3D printing technologies
- development of composite materials based on algal biomass and lunar regolith
- modeling environmental processes using Earth observation data
- pulsed plasma propulsion systems
- autonomous systems for lunar bases and long-duration missions
- pathogen detection via satellite remote sensing
- organ-on-chip technologies in microgravity
- federated AI models for biomedical applications in spaceflight

The programme provides access to modern research infrastructure, international collaboration, and strong links with industry and space institutions.

RESEARCH AT THE FACULTY

In addition to our educational offer, the Faculty of Space Technologies is strongly engaged in advanced scientific research.
We host a vibrant and interdisciplinary research environment, bringing together 15 Research Units working across the full spectrum of space science and technology.

Our research covers key areas such as:

- design and execution of planetary, orbital, and satellite missions
- development of advanced materials and technologies for space structures and future habitats
- life sciences in space, including astronaut health and bioastronautics
- satellite data processing, Earth observation, and environmental monitoring
- space propulsion systems and next-generation mobility concepts
- artificial intelligence, autonomy, and cybersecurity for space systems
- human factors, space education, and the societal impact of space technologies
- space medicine and technologies supporting human survival in extreme environments
- optimization, digital twins, and advanced modelling for space applications

This integrated research ecosystem connects engineering, life sciences, AI, and social sciences, enabling a holistic approach to solving the challenges of future space exploration and the emerging space economy.

AGH UNIVERSITY OF KRAKOW

- AGH University of Krakow is one of the leading technical universities in Poland, with a history dating back to 1919. It currently educates around **20,000 students across 18 faculties.**

  AGH employs around **2,300 academic staff**, including renowned professors and researchers actively involved in national and international scientific projects. The university is known for its cutting-edge research and modern laboratories, supporting **innovation and collaboration with industry.**

  International cooperation is a priority at AGH, which participates in numerous global research networks and educational programs, welcoming students and researchers from around the world. The university's graduates are highly sought after in the job market due to their solid theoretical knowledge combined with practical skills.

STUDENT LIFE IN KRAKOW

- Studying at the Faculty of Space Technologies also means experiencing life in one of Europe's most vibrant academic cities. Krakow offers a unique blend of history, innovation, and a dynamic student atmosphere.
  The AGH University campus and surrounding student housing create a lively academic hub, where everyday life is shaped by collaboration, creativity, and international exchange. The city itself is full of cafés, restaurants, cultural venues, and museums, making it an ideal place to study and live.

  Krakow is also known for its rich cultural calendar, including festivals, concerts, exhibitions, and thematic events. At the same time, its location near the mountains provides easy access to nature, hiking, and outdoor activities.

  This combination of academic excellence, vibrant urban life, and proximity to the mountains makes studying in Krakow a truly unique experience.

THANK YOU

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