MGT-462

New space economy

Röttgen Raphaël Alexander

Cursus	Sem.	Type
Management, Technology and Entrepreneurship minor	H	Opt.
Managmt, tech et entr.	MA1, MA3	Opt.
Space technologies minor	H	Opt.

Language of teaching	English
Credits	3
Session	Winter
Semester	Fall
Exam	During the semester
Workload	90h
Weeks	14
Hours	**3 weekly**
Courses	1 weekly
Exercises	1 weekly
Project	1 weekly
Number of positions	

Remark

Special schedule. See the MTE website: https://go.epfl.ch/mte

Summary

This course will teach students the major trends and characteristics of the space economy. We will examine key business models that use space technologies, including those that benefit from use cases right here on Earth. As a final project, students will elaborate and present their own business idea

Content

The space industry is a fast-growing market, boosted by the commercialization of this historically institutional sector. As space is becoming more accessible, the current growth of space infrastructures and data is opening a full range of innovative applications for new customers.
Students will be introduced to current and future space infrastructures and technology, such as telecommunication, geolocation, Earth Observation, or in-space manufacturing. They will then learn how these space applications can enable new products and services on Earth. Finally, the course will focus on how space can make Earth more sustainable and how to make sure to keep space sustainable in return.
Students will learn about the history of space exploration with former Astronaut Claude Nicollier, follow lectures on cutting-edge space applications by professors and scientists from EPFL, ETH, and University of Zurich, and discover new space business models with exciting Swiss space companies, like Astrocast and Clearspace.
Whether you are a future entrepreneur or a future researcher, this course gives you the skills to design your project with an positive environmental impact and a concrete business application

Keywords

Space, Entrepreneurship

Learning Outcomes

By the end of the course, the student must be able to:

- Categorize and distinguish key business models using space technology
- Elaborate and present a space-related business idea
- Understand the key trends driving the current and future growth of the space economy

Transversal skills

- Set objectives and design an action plan to reach those objectives.
- Chair a meeting to achieve a particular agenda, maximising participation.
- Communicate effectively with professionals from other disciplines.
- Identify the different roles that are involved in well-functioning teams and assume different roles, including leadership roles.
- Take responsibility for environmental impacts of her/ his actions and decisions.
- Demonstrate the capacity for critical thinking
- Manage priorities.
- Make an oral presentation.

Teaching methods

- Bi-weekly on-campus lectures
- Practice MCQ quizzes, available online
- Office hours (likely virtual)

Expected student activities

- Develop and present a space-related business plan

Assessment methods

- Midterm MCQ exam 25%
- Final MCQ exam 25%
- Business plan oral presentation 50%

Resources

Virtual desktop infrastructure (VDI)

Yes

Bibliography

#1 https://www.euspa.europa.eu/sites/default/files/uploads/euspa_market_report_2022.pdf
#2 https://www.eib.org/attachments/thematic/future_of_european_space_sector_en.pdf
#3 https://www.pwc.fr/fr/assets/files/pdf/2020/12/en-france-pwc-main-trends-and-challenges-in-the-space-sector.pdf
#5 https://brycetech.com/reports
#6 https://seraphim.vc/wp-content/uploads/2021/03/Seraphim-Capital-Ecosystem-Map-2021.pdf
#7 https://www.unoosa.org/res/oosadoc/data/documents/2021/stspace/stspace79_0_html/st_space79E.pdf
#8 https://www.pwc.fr/fr/assets/files/pdf/2022/07/fr-france-pwc-space-main-trends-and-challenges-3rd-final.pdf

Moodle Link

- https://go.epfl.ch/MGT-462