



Course and Examination Fact Sheet: Spring Semester 2025

8,514: From Earth to Space and Back - Lessons for Responsible Innovation from CERN

ECTS credits: 6

Overview examination/s

(binding regulations see below)

decentral - Presentation, Analog, Group work group grade (20%)

Examination time: Term time

decentral - Written work, Digital, Individual work individual grade (30%)

Examination time: Term time

decentral - Active participation, Analog, Individual work individual grade (20%)

Examination time: Term time

decentral - Presentation, Analog, Group work group grade (30%)

Examination time: Term time

Attached courses

Timetable -- Language -- Lecturer

[8,514,1.00 From Earth to Space and Back - Lessons for Responsible Innovation from CERN](#) -- English -- [Siren Charlotta](#)

Course information

Course prerequisites

While no prerequisites are required, we expect students to have a strong interest in creative processes, responsible innovation, and sustainable transformation.

Students need to stay overnight (two nights) and take into account the longer distance in their planning for the field trip to CERN IdeaSquare in Geneva. In addition, time for self-study is required throughout the course, both individually and in the group.

In case of administrative and content-related questions, please contact the teaching assistant Alina Welser:

alina.welser@student.unisg.ch.

Learning objectives

In this course, students experience larger-than-life challenges and devise solutions to them in a different reality. They will learn...

- how to employ VR technology to virtually fly to Mars.
- to develop strategies for virtually creating and cultivating a liveable world on another planet. This includes the allocation of resources and establishing a functioning society on Planet B.
- to deal with various challenges in a responsible way.
- to collaborate and to both give and receive constructive feedback in the interaction with the team, the lecturers, and experts from CERN IdeaSquare.

Students who complete this class will be able to:

- determine the course of action in the class exercise by identifying, assessing, and weighing different options.
- manage challenges and coordinate further action as a team.
- derive workable solutions and transferable practices or designs from the exercises and present them convincingly.



- evaluate and reflect on the lessons learned from the exercises of the course.
- critically discuss the most important societal and environmental challenges facing our planet and the role of responsible innovation for our planet's future.

Course content

In this course, students will virtually fly to another planet by using VR technologies. The main course exercise called "Planet B" entails traveling virtually to Mars, ideating responsible solutions for challenges in this alternate reality, and deriving valuable lessons for planet earth. On their way to and upon arrival at Mars, students will face a series of interconnected challenges in a comprehensive case study. Afterwards, they will use the lessons learned and apply them from Planet B to Earth.

The course happens in close collaboration with CERN's IdeaSquare. As part of the course program, the students will visit the IdeaSquare in Geneva for a three-day design sprint. This design exercise will pay significant attention to the role of innovation in enabling students to deal with various challenges in a responsible way.

Please note that successful completion of the course demands active student participation during exercises and teamwork. Active in-class contribution throughout the course will also be graded.

Course structure and indications of the learning and teaching design

This course consists of six face-to-face sessions and a coaching session. The structure is as follows:

Session 1: A kick-off session and an introduction to the main course exercise

Session 2: "Planet B" VR exercise

Session 3-5: Excursion to CERN IdeaSquare in Geneva including first group presentations at the end of the visit

Coaching session: Coaching session with the course lecturer after the block seminar to prepare for the final group presentations

Session 6: Final group presentations

Furthermore, time for self-study is scheduled throughout the course, especially for the preparation and follow-up of the block seminar. Students are responsible for checking the course dates for possible overlaps with other courses. In addition, students need to stay overnight (two nights) and take the longer distance into account when planning the excursion to CERN IdeaSquare in Geneva. Students are responsible for covering any travel and accommodation costs for the field trip to Geneva themselves.

The kick-off lecture outlines the design challenge as well as guides students to team building. After this session, students will have time to prepare for the virtual flight to Mars. On the next session taking place at the University of St.Gallen, students will fly to Mars by using VR technology. On their flight, students will experience a series of challenges that they need to solve as a group. For the block seminar, students will travel to Geneva for a three-day design sprint at the CERN IdeaSquare. During the design sprint, they will arrive on Mars and start solving interconnected challenges in teams. When at CERN IdeaSquare, students will not only have access to information and technologies for a terraforming exercise, but they also have opportunities to talk to CERN scientists who serve as mentors/advisors. In groups, the students will discuss potential solutions and build prototypes. Each group will focus on a specific challenge and at the end of the CERN visit present their specific solution to the challenge. Back at the University of St.Gallen, in the weeks after the block seminar, student groups will receive an individual coaching session to advance their project. Students are also provided self-study time to deep-dive into their project topic and further develop their ideas based on the feedback from the coaching session. In the last week of the semester, the groups will present their transferable practices or designs to be brought back to earth. In addition, each student will write a personal reflection paper on the lessons learned from these exercises, with special attention to the role responsible innovation for our own planet's future.

Course literature

The literature will be announced via StudyNet at the beginning of the course. However, the following article and book give a great starting point for students to understand the topic:

- Voegtlin, C., & Scherer, A. G. (2017). Responsible innovation and the innovation of responsibility: Governing sustainable development in a globalized world. *Journal of Business Ethics*, 143, 227-243.



- Mason, C. E. (2022). *The Next 500 Years: Engineering Life to Reach New Worlds*. The MIT Press. (Available as an ebook from the HSG library)

Additional course information

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Examination information

Examination sub part/s

1. Examination sub part (1/4)

Examination modalities

Examination type	Presentation
Responsible for organisation	decentral
Examination form	Oral examination
Examination mode	Analog
Time of examination	Term time
Examination execution	Asynchronous
Examination location	Off Campus
Grading type	Group work group grade
Weighting	20%
Duration	--

Examination languages

Question language: English
Answer language: English

Remark

Team presentation at CERN

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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2. Examination sub part (2/4)

Examination modalities

Examination type	Written work
Responsible for organisation	decentral
Examination form	Written work
Examination mode	Digital
Time of examination	Term time
Examination execution	Asynchronous
Examination location	Off Campus
Grading type	Individual work individual grade
Weighting	30%



Duration --

Examination languages

Question language: English

Answer language: English

Remark

Critical reflection paper

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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3. Examination sub part (3/4)

Examination modalities

Examination type	Active participation
Responsible for organisation	decentral
Examination form	Oral examination
Examination mode	Analog
Time of examination	Term time
Examination execution	Synchronous
Examination location	On Campus
Grading type	Individual work individual grade
Weighting	20%
Duration	--

Examination languages

Question language: English

Answer language: English

Remark

Active class contribution

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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4. Examination sub part (4/4)

Examination modalities

Examination type	Presentation
Responsible for organisation	decentral
Examination form	Oral examination
Examination mode	Analog



Time of examination	Term time
Examination execution	Asynchronous
Examination location	On Campus
Grading type	Group work group grade
Weighting	30%
Duration	--

Examination languages

Question language: English

Answer language: English

Remark

Final team presentation

Examination-aid rule

Free aids provision

Basically, students are free to choose aids. Any restrictions are defined by the faculty members in charge of the examination under supplementary aids.

Supplementary aids

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Examination content

The guidelines for the assignments are presented within the introductory lecture. The presentations take place in the last lecture. Late submissions are not accepted and will receive the grade 1.0.

Examination relevant literature

The relevant literature will be made available through StudyNet.

Please note

Please note that only this fact sheet and the examination schedule published at the time of bidding are binding and takes precedence over other information, such as information on StudyNet (Canvas), on lecturers' websites and information in lectures etc.

Any references and links to third-party content within the fact sheet are only of a supplementary, informative nature and lie outside the area of responsibility of the University of St.Gallen.

Documents and materials are only relevant for central examinations if they are available by the end of the lecture period (CW21) at the latest. In the case of centrally organised mid-term examinations, the documents and materials up to CW 13 (Monday, 25 March 2025) are relevant for testing.

Binding nature of the fact sheets:

- Course information as well as examination date (organised centrally/decentrally) and form of examination: from bidding start in CW 04 (Thursday, 23 January 2025);
- Examination information (supplementary aids, examination contents, examination literature) for decentralised examinations: in CW 12 (Monday, 17 March 2025);
- Examination information (supplementary aids, examination contents, examination literature) for centrally organised mid-term examinations: in CW 14 (Monday, 31 March 2025);
- Examination information (regulations on aids, examination contents, examination literature) for centrally organised examinations: two weeks before ending with de-registration period in CW 15 (Monday, 07 April



2025).