



Course and Examination Fact Sheet: Spring Semester 2025

8,924: Aviation Systems - Management of the Aviation Value Chain

ECTS credits: 6

Overview examination/s

(binding regulations see below)

decentral - Written examination, Analog, Group work group grade (25%, 120 mins.)

Examination time: Term time

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

Examination time: Term time

decentral - Oral examination and technical discussions, Digital, Group work individual grade (30%)

Examination time: Term time

decentral - Presentation, Analog, Group work group grade (25%)

Examination time: Term time

Attached courses

Timetable -- Language -- Lecturer

[8,924,1.00 Aviation Systems - Management of the Aviation Value Chain \(CEMS Elective Course\)](#) -- English -- [Wittmer Andreas](#)

Course information

Course prerequisites

None

Learning objectives

The learning goals of the course are twofold:

- To understand the system of aviation from different perspectives: (1) Politics, (2) Economy, (3) Society, (4) Technology and (5) Environment

- To learn about the specifics of managing companies in the aviation industry along the aviation value chain and specifically managing airlines.

In order to achieve this goal, students should:

- Generate knowledge of the developments in the field of aviation.
- Understand and know the general concepts of aviation management.
- Understand the aviation value chain.
- Learn about the importance of networks and business models and how they work.
- Learn about revenue management and understand its importance for airlines.
- Learn about Risk and Safety management in Aviation
- Know the special operational and economic challenges in aviation and solutions in theory and practice.
- Get to know possible career areas and chances of entry in the field.
- Be able to identify research questions and be able to answer them by applying an adequate research methodology.
- Participate in a study group managing an airline by using an airline simulation tool. This serves as a culminating experience allowing senior-level students the opportunity to synthesize their knowledge and apply that knowledge toward solving "real-world" issues/problems.

Course content

Sensitize students for "real-world" aviation problems and management aspects. The course provides the students with a broad understanding of the complexity of the aviation industry. An integrated part of the course is an airline business simulation,



which allows the students to participate in a competitive close to real-world environment and transfer the theory into practice. The aviation industry is an excellent ideas to see extremes (in pricing, revenue management, network management, marketing, risk management, etc.) which can be tranferred to other international industries.

Course structure and indications of the learning and teaching design

The course will deal with theory and case discussions which will be applied with an airline simulation game, where student teams compete managing their airlines.

In theory blocks, the lecturer provides an insight into different topic which are needed to manage an airline. During these blocks there will be theoretical input, Q&As, article presentations by students and case discussions.

There will be different intro and review sessions concerning the ongoing airlines simulation including presentation session where the business plans and final reflection report of the airline is presented.

A reflection will be done to close the course.

1. Introduction to Aviation
2. Environments of Aviation: The Aviation System
3. Supply: Aviation Value Chain
4. Supply: Airline Net Economy
5. Supply: Airlines Business Models
6. Demand: Aviation Marketing and Customer Value
7. Demand: Airline Pricing and Revenue Management
8. Airline Operations: Guest Lecture Swiss International Airlines
9. Steering/ Controlling: Safety, Human Factors and Risk Management
10. Presentation of Airlines simulation self evaluation and reflection

Course literature

Main texts:

Wittmer, A. Bieger, T., & Müller, R. (2021). Aviation Systems - Management of the Integrated Aviation Value Chain. Heidelberg: Springer.

Wittmer, A., Müller, R. & Drax, C. (2014). Aviation Risk and Safety Management - Methods and Applications in Aviation Organisations. Heidelberg: Springer.

Wittmer, A., Walls, J. (Hrsg), (2022). Sustainable Aviation. Heidelberg: Springer.

Additional:

Specific journal articles and case studies with reference to current events/facts - they will be announced and prepared for download via studynet.

Additional course information

The first phase of the course will give an overview over the history and the relevant characteristics, as well as the most important themes in aviation. Building on that, aviation will be considered from the business point of view through the reflection of specific themes. Consisting concepts will be analysed with the field specific characteristics.



Didactical Approach

Lectures will be held in classroom mostly, otherwise online. Q&A Sessions concerning the course content will be held in class and Q&A sessions concerning the simulation will be held online. There will be different sources for the learning experience:

- Accompanied reading of the textbook, videos and additional literature
- Speech from guest lecturer from the practical field
- Contact studies with teaching conversations, practice papers related to the airline simulation.
- Airline Management Simulation (teams of 5 Students will manage an airline)
- Discussions of case studies
- Q&A sessions

Examination information

Examination sub part/s

1. Examination sub part (1/4)

Examination modalities

Examination type	Written examination
Responsible for organisation	decentral
Examination form	Written exam
Examination mode	Analog
Time of examination	Term time
Examination execution	Synchronous
Examination location	On Campus
Grading type	Group work group grade
Weighting	25%
Duration	120 mins.

Examination languages

Question language: English
Answer language: English

Remark

Airline Business Model for Simulation submission

Examination-aid rule

Open Book

Students are free to choose aids, apart from the following restrictions:

- pocket calculator models which are not part of the Texas Instruments TI-30 series, as well as any programmable electronic devices that are capable of communication such as electronic dictionaries, notebooks, tablets, smartphones, headsets, additional screens, etc. are not admissible;
- there is an option for faculty members to explicitly define exceptions under supplementary aids.

Procuring any aids, as well as ensuring their working order, is the exclusive responsibility of students.

Supplementary aids

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2. Examination sub part (2/4)

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	20%
Duration	--

Examination languages

Question language: English
Answer language: English

Remark

Article presentation in class in teams

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	Oral examination and technical discussions
Responsible for organisation	decentral
Examination form	Oral examination
Examination mode	Digital
Time of examination	Term time
Examination execution	Asynchronous
Examination location	Off Campus
Grading type	Group work individual grade
Weighting	30%
Duration	--

Examination languages

Question language: English
Answer language: English

Remark

Oral group exam online 4 - 5 students indiv. grade

Examination-aid rule

Open Book

Students are free to choose aids, apart from the following restrictions:



- pocket calculator models which are not part of the Texas Instruments TI-30 series, as well as any programmable electronic devices that are capable of communication such as electronic dictionaries, notebooks, tablets, smartphones, headsets, additional screens, etc. are not admissible;
- there is an option for faculty members to explicitly define exceptions under supplementary aids.

Procuring any aids, as well as ensuring their working order, is the exclusive responsibility of students.

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	25%
Duration	--

Examination languages

Question language: English

Answer language: English

Remark

Airline Simulation Self-Reflection 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

Article Presentation: Students will be working in groups (4 - 6 persons) for journal article presentations. Articles will be handed out during the first lecture.

Airline management simulation: There will be management teams of 4 - 6 Students. Each team needs to hand in a short business model (based on a given framework and described on one page) and a final self-evaluation and reflection report at the end of the semester (incl. presentation and discussion).

Note: when a guest lecture is given, class attendance is expected.

Examination relevant literature

Wittmer, A. Bieger, T., & Müller, R. (2021). Aviation Systems - Management of the Integrated Aviation Value Chain. Heidelberg: Springer



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).