

## COURSE OUTLINE

### 1. Data about the study programme

1.1 Higher education institution	Transilvania University of Brasov
1.2 Faculty	Technological Engineering and Industrial Management
1.3 Department	Engineering and Industrial Management
1.4 Field of study <sup>1)</sup>	Engineering and Management
1.5 Study level <sup>2)</sup>	MA
1.6 Study programme/ Qualification	Engineering and Management in Aviation / Master

### 2. Data about the course

2.1 Name of course	Engineering and Management of Aviation Systems							
2.2 Course convenor	Mircea BOȘCOIANU							
2.3 Seminar/ laboratory/ project convenor	Mircea BOȘCOIANU							
2.4 Study year	II	2.5 Semester	4	2.6 Evaluation type	E	2.7 Course status	Content <sup>3)</sup>	PC
							Attendance type <sup>4)</sup>	CPC

### 3. Total estimated time (hours of teaching activities per semester)

3.1 Number of hours per week	3	out of which: 3.2 lecture	2	3.3 seminar/ laboratory/ project	1/0/0
3.4 Total number of hours in the curriculum	42	out of which: 3.5 lecture	28	3.6 seminar/ laboratory/ project	14/0/0
Time allocation					hours
Study of textbooks, course support, bibliography and notes					10
Additional documentation in libraries, specialized electronic platforms, and field research					20
Preparation of seminars/ laboratories/ projects, homework, papers, portfolios, and essays					10
Tutorial					15
Examinations					3
Other activities.....					
3.7 Total number of hours of student activity		58			
3.8 Total number per semester		100			
3.9 Number of credits <sup>5)</sup>		4			

### 4. Prerequisites (if applicable)

4.1 curriculum-related	• Not specified
4.2 competences-related	• Not specified

### 5. Conditions (if applicable)

5.1 for course development	• Not specified
5.2 for seminar/ laboratory/ project development	• Not specified

## 6. Specific competences and learning outcomes

Professional competences	<p>Cp.3. Manages production systems</p> <p>L.O.3.2. The graduate will be able to interpret different phenomena and results regarding the company's performance in order to improve production, managerial and research activities.</p> <p>L.O.3.4. The graduate will be able to evaluate and, accordingly, choose the most effective directions regarding the development of the company.</p>
Transversal competences	<p>Ct.2 Practices results-oriented leadership towards colleagues</p> <p>L.O.2.1. The graduate will be able to assume responsibilities, to exercise results-oriented leadership.</p> <p>L.O.2.3. The graduate will be able to provide project management, for the management and planning of material, human, financial and informational resources for a given project as well as for the evaluation of the technical-economic results of that project.</p>

## 7. Course objectives (resulting from the specific competences to be acquired)

7.1 General course objective	<ul style="list-style-type: none"> <li>to give advanced knowledge in aviation systems management</li> <li>to give advanced practical tools for aviation systems management</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li>understanding, applying, analysing, evaluating and improving specific skills in aviation management</li> <li>to gain ability to apply advanced and innovative ideas, new algorithmic paradigms and to efficient select between alternative solutions</li> <li>to gain competencies in modern aviation dynamics in a changing global framework of competitors and stakeholders</li> </ul>

## 8. Content

8.1 Course	Teaching methods	Number of hours	Remarks
Introduction in modern aviation systems	lectures (with peer instructions)	4	
Air transportation- the new paradigms in the era of globalization and post liberalization	lectures (with peer instructions)	4	
Airline industry. Architecture. Statistics. Certifications. Agreements.	lectures (with peer instructions)	4	
Airports. International hubs. Small/ medium airports. Cargo specialist. Integrators. Radio navigation systems for airports.	lectures (with peer instructions)	4	
Aircraft manufacturing industry	lectures (with peer instructions)	4	
Managerial and organizational aspects. Line departments. Engineering and maintenance management	lectures (with peer instructions)	4	
Marketing strategies in aviation systems	lectures (with peer instructions)	4	
<p>Bibliography</p> <p>Ashford, N., Airport operations, 2012</p> <p>Barthomolomew, E., Airport and aviation security, 2009</p> <p>Bruce, P., Airline operations, 2020</p> <p>Cook, G., Bilig, B., Airline operations and management, 2023</p> <p>Doganis, R. The Airline Business in the Twenty-First Century. London: Routledge, 2001</p> <p>Nicolaeovich, O., Radio navigation systems for airports and airways, Springer, 2019</p> <p>O'Connor, W., An Introduction to Airline Economics, New York, 2000</p>			

Stolzer, A., Safety management systems in aviation, 2015 Wittmer, A., Aviation Systems: Management of the Integrated Aviation Value Chain, Springer 2011			
8.2 Seminar/ laboratory/ project	Teaching-learning methods	Number of hours	Remarks
NextGen Air transportation systems and Air traffic systems	Seminars+ project	2	
Fleet dynamic planning process	Seminars+ project	2	
System models. System thinking	Seminars+ project	2	
Situational awareness (SA) models: SART (SA Rating Technique), SAGAT (SA Global assessment Tech), SPAM (Situation Present assessment Method)	Seminars+ project	4	
Safety management systems (SMS) and Resilience engineering (RE)	Seminars+ project	2	
Organizations and regulations in global aviation supply chain	Seminars+ project	2	
Bibliography Ashford, N., Airport operations, 2012 Bartholomew, E., Airport and aviation security, 2009 Bruce, P., Airline operations, 2020 Cook, G., Bilig, B., Airline operations and management, 2023 Doganis, R. The Airline Business in the Twenty-First Century. London: Routledge, 2001 Holloway, S., Air Finance: Aircraft Acquisition Finance and Airline Credit Analysis, 2020 Stolzer, A., Safety management systems in aviation, 2015 Wittmer, A., Aviation Systems: Management of the Integrated Aviation Value Chain, Springer 2011			

**9. Correlation of course content with the demands of the labor market (epistemic communities, professional associations, potential employers in the field of study)**

The contents have been developed in relation to the requirements of employers, so that the learning outcomes can be applied in industrial environment and research.
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**10. Evaluation**

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of the final grade
10.4 Course	Ability to understand the concepts and to identify the responses based on the knowledge	Testing knowledge	50%
10.5 Seminar/ laboratory/ project	Valuation of the capacity to implement the practical elements	Testing knowledge	50%

10.6 Minimal performance standard
<ul style="list-style-type: none"> <li>• minimum 50% theoretical valuation</li> <li>• minimum 50% seminar valuation</li> <li>• minimum 70% course project valuation</li> </ul>

This course outline was certified in the Department Board meeting on 17/09/2024 and approved in the Faculty Board meeting on 26/09/2024.

Prof. Eng Tudor Ion DEACONESCU, PhD  <b>Dean</b>	Assoc.Prof. Eng Flavius SÂRBU, PhD  <b>Head of Department</b>
Prof Mircea BOȘCOIANU, PhD <b>Course holder</b>	Prof Mircea BOȘCOIANU, PhD <b>Holder of seminar/ laboratory/ project</b>

Note:

- 1) Field of study – select one of the following options: Bachelor / Master / Doctorat (to be filled in according to the forceful classification list for study programmes);
- 2) Study level – choose from among: Bachelor / Master / Doctorat;
- 3) Course status (content) – for the Bachelor level, select one of the following options: **FC** (fundamental course) / **DC** (course in the study domain)/ **SC** (speciality course)/ **CC** (complementary course); for the Master level, select one of the following options: **PC** (proficiency course)/ **SC** (synthesis course)/ **AC** (advanced course);
- 4) Course status (attendance type) – select one of the following options: **CPC** (compulsory course)/ **EC** (elective course)/ **NCPC** (non-compulsory course);
- 5) One credit is the equivalent of 25 study hours (teaching activities and individual study).