

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 ¹⁾	Engineering and Management
1.5 Study level ²⁾	MA
1.6 Study programme/ Qualification	Engineering and Management in Aviation / Master

2. Data about the course

2.1 Name of course	Aviation Logistics							
2.2 Course convenor	Catrina CHIVU							
2.3 Seminar/ laboratory/ project convenor	Catrina CHIVU							
2.4 Study year	II	2.5 Semester	3	2.6 Evaluation type	E	2.7 Course status	Content ³⁾	AC
							Attendance type ⁴⁾	EC

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

3.1 Number of hours per week	4	out of which: 3.2 lecture	2	3.3 seminar/ laboratory/ project	0/2/0
3.4 Total number of hours in the curriculum	56	out of which: 3.5 lecture	28	3.6 seminar/ laboratory/ project	0/28/0
Time allocation					hours
Study of textbooks, course support, bibliography and notes					20
Additional documentation in libraries, specialized electronic platforms, and field research					10
Preparation of seminars/ laboratories/ projects, homework, papers, portfolios, and essays					26
Tutorial					10
Examinations					3
Other activities.....					
3.7 Total number of hours of student activity		69			
3.8 Total number per semester		125			
3.9 Number of credits ⁵⁾		5			

4. Prerequisites (if applicable)

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

5. Conditions (if applicable)

5.1 for course development	• Room with video projector
5.2 for seminar/ laboratory/ project development	• Computer room, fluidtronics laboratory

6. Specific competences and learning outcomes

Professional competences	<p>Cp.1 Applies advanced manufacturing systems L.O. 1.2 The graduate will be able to effectively understand, interpret and apply work instructions regarding different activities at work.</p> <p>Cp.2 Manages all process engineering activities L.O.2.3. The graduate will be able to ensure the appropriate framework for planning, coordinating and directing processes, following the entire internal logistics flow of the product, from the raw material/semi-finished product stage to the finished product stage. L.O. 2.4 The graduate will be able to prepare documentation for existing or future products and/or services, presenting in a coherent manner their functionality, to customers.</p>
Transversal competences	<p>Ct.2 Practices results-oriented leadership towards colleagues L.O.2.1. The graduate will be able to assume responsibilities, to exercise results-oriented leadership. 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"> To develop the knowledge and skills necessary to effectively plan, implement and manage logistics processes within the aeronautical industry, with the aim of ensuring operational efficiency, safety and sustainability in aviation operations.
7.2 Specific objectives	<ul style="list-style-type: none"> Identification of the logistics flow in the aviation field Identification of appropriate logistics systems for the aviation industry, from production systems to airports

8. Content

8.1 Course	Teaching methods	Number of hours	Remarks
1. Introduction to Aviation Logistics	Lecture, video projector	2	
2. Aeronautical Supply Chain		2	
3. Maintenance and integrated logistical support		2	
4. Compliance and safety regulations		2	
5. Airport ecosystem and related logistics		4	
6. Principles of designing the layout of an airport		4	
7. Inventory Management and Sourcing		2	
8. Warehouse handling systems: types of warehouses in the aeronautical field; choice of equipment.		4	
9. Financial aspects of aviation logistics		2	
10. Risk management in logistics systems		2	
11. Impact of digitalization and artificial intelligence on aviation logistics		2	
Bibliography			
1. Sales, Michael – <i>Aviation Logistics: the dynamic partnership of air freight and supply chain</i> . Editura Kogan Page Limited, 2016, e-ISBN 9780749472719			
2. Young, Seth; Wells, Alexander - <i>Airport Planning and Management</i> . McGraw-Hill Publishing House, 2019, ISBN 9780071750240			
3. Rudd, Jerry - <i>A Practical Guide to Logistics. An introduction to transport, warehousing, trade and distribution</i> . Editura Kogan Page Limited, 2019, e-ISBN 9780749486327			

4. Budd, Lucy; Ison, Stephen - <i>Air Transport Management: An international perspective</i> . Editura Routledge, 2016, ISBN 9781472451033			
8.2 Seminar/ laboratory/ project	Teaching-learning methods	Number of hours	Remarks
1. Mapping logistics processes in aviation	Case study	2	
2. Simulation of logistics flows within commercial airports	Applications, simulations in Tecnomatix	4	
3. Advanced Inventory Management Techniques for the Aviation Industry	Case study	4	
4. Design of a warehouse specific to the aviation/airport industry	Applications, simulations in Tecnomatix	6	
5. Designing a sustainable aviation logistics system	Case study	4	
6. Calculation of the costs of the logistics system	Case study	2	
7. Risk Analysis in Aviation Logistics Management	Case study	2	
8. Design of the layout of the logistics system in an airport	Project	4	
<p>Bibliography</p> <p>1. Sales, Michael – <i>Aviation Logistics: the dynamic partnership of air freight and supply chain</i>. Editura Kogan Page Limited, 2016, e-ISBN 9780749472719</p> <p>2. Young, Seth; Wells, Alexander - <i>Airport Planning and Management</i>. McGraw-Hill Publishing House, 2019, ISBN 9780071750240</p> <p>3. Rudd, Jerry - <i>A Practical Guide to Logistics. An introduction to transport, warehousing, trade and distribution</i>. Editura Kogan Page Limited, 2019, e-ISBN 9780749486327</p> <p>4. Budd, Lucy; Ison, Stephen - <i>Air Transport Management: An international perspective</i>. Editura Routledge, 2016, ISBN 9781472451033</p> <p>5. Stephens, Matthew; Meyers, Fred – <i>Manufacturing Facilities Design and Material Handling</i>. Purdue University Press, 2020, ISBN 9781557536501</p> <p>6. Bangsow, Steffen - <i>Tecnomatix Plant Simulation. Modeling and Programming by Means of Examples</i>. Springer Verlag, 2020, ISBN 9783030415440</p> <p>7. *** Airports Council International (ACI) – www.aci.aero</p> <p>8. *** Federal Aviation Administration (FAA) – www.faa.gov</p> <p>9. *** International Civil Aviation Organization (ICAO) – www.icao.int</p> <p>10. *** International Air Transport Association (IATA) – www.iata.org</p> <p>11. *** European Union Aviation Safety Agency (EASA) – www.easa.europa.eu</p> <p>12. *** Air Transport Action Group (ATAG) – atag.org</p> <p>13. *** SITA – Leading IT provider for the air transport industry (www.sita.aero)</p> <p>14. *** Center for Aviation Safety Research – casr.slu.edu</p> <p>15. *** Aviation Innovation Network – www.aviation-innovation.net</p>			

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

The contents have been developed in relation to the employers' requirements, so that the learning results can be applied in the industrial environment and in research.

10. Evaluation

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of the final grade
10.4 Course	1. Use of specific language 2. Identification of the principles of design of logistics systems in aviation 3. Mapping the logistics system in a production system, airport, aviation warehouse	Quiz	10%
10.5 Seminar/ laboratory/ project	Project: 1. Identification of inputs to a logistics system 2. Criteria for designing the logistics system according to the field 3. Layout of the logistics system 4. Simulation in Tecnomatix	Project	90%
10.6 Minimal performance standard			
<ul style="list-style-type: none">• Mapping the logistics system• Identification of data in the design of a logistics system and establishing the dependencies of this data on the type of logistics system• Calculation of the necessary spaces depending on the logistics system and field.			

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
Dean

Assoc.Prof. Eng Flavius SÂRBU, PhD
Head of Department

Assoc.Prof.Eng. Catrina CHIVU, PhD
Course holder

Assoc.Prof.Eng. Catrina CHIVU, PhD
Holder of seminar/ laboratory/ project

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).