



GRADUATE STUDY: **AERONAUTICS**

SEMESTER (I)

Syllabus

Academic year 2025/2026

Course: Airport Operations					
Head of course: Asst. Prof. Matija Bračić , Ph.D. Asst. Prof. Igor Štimac , Ph.D.					
Co-lecturers:					
Semester: W	Course code: 172923	Lectures: 30	Auditory exercises: 15	Laboratory exercises: 0	ECTS credits: 5
Group for lectures: 10 students			Group for auditory and laboratory exercises: 10 students		

Objective of the course:

- Familiarize students with the principles of airport system planning and organization. Define and analyse the passenger/baggage, cargo/mail and aircraft ramp handling. Elaborate the correlation between airport capacity and delays. Establish principles of land use and environmental control.

Learning outcomes:

At the end of the course students should:

1. **Define** the basic terms in the field of airport organization and management, **describe** the complexity of the airport operations
2. **Explain** the technological processes within airport system and their impact on aircraft operations
3. Know how to **apply** international security and safety regulations
4. **Analyse** the impact of aircraft delays on the airport capacity and environmental



LECTURES and EXERCISES

Week	Syllabus	Form of classes	Performed by	Lessons	Remark
1.	- Airport as the operating system - Airport functions and participants - Complexity of the airport operations - Management and Organization	L	Matija Bračić	2	
	- Competence and responsibility on the manoeuvring area and the apron - Traffic and capacity	AE	Matija Bračić	1	
2.	- Airlines schedules - Aerodrome traffic/capacity peaks - Aerodrome operations on the air side	L	Matija Bračić	2	
	Traffic and capacity	AE	Matija Bračić	1	
3.	- Aircraft ground handling process - Aircraft ramp handling process	L	Matija Bračić	2	
	Aircraft ramp handling process	AE	Matija Bračić	1	
4.	- Aircraft ramp handling process - Organization and coordination with passengers and baggage handling process - cargo and mail handling process	L	Matija Bračić	2	
	Aircraft ramp handling process	AE	Matija Bračić	1	
5.	Aircraft ramp handling process	L	Matija Bračić	2	
	Aircraft ramp handling process	AE	Matija Bračić	1	



6.	- Passengers and baggage handling process - Passenger terminal: flows and facilities	L	Matija Bračić	2	
	Aircraft ramp handling process	AE	Matija Bračić	1	
7.	- Passengers handling process - Interfaces on the land side - Interfaces on the air side	L	Matija Bračić	2	
	Aircraft ramp handling process	AE	Matija Bračić	1	
8.	- Baggage handling process - Passenger terminal: flows and facilities	L	Matija Bračić	2	
	Colloquium I	AE	Matija Bračić	1	
9.	- Cargo and mail handling process - Cargo terminal: flows and facilities - Interfaces on the land side - Interfaces on the air side	L	Matija Bračić	2	
	Interfaces on the land side	AE	Matija Bračić	1	
10.	Aerodrome security	L	Matija Bračić	2	
	- Passengers and baggage handling process - Passenger terminal: flows and facilities	AE	Matija Bračić	1	
11.	Airport emergency	L	Matija Bračić	2	



	▪ Baggage handling process	AE	Matija Bračić	1	
12.	▪ Airport emergency	L	Matija Bračić	2	
	▪ Cargo handling process	AE	Matija Bračić	1	
13.	▪ Operations on the land side	L	Matija Bračić	2	
	▪ Aerodrome security	AE	Matija Bračić	1	
14.	▪ Operational services	L	Matija Bračić	2	
	▪ Airport emergency	AE	Matija Bračić	1	
15.	▪ Maintenance ▪ Aerodrome certification ▪ Aerodrome manual	L	Matija Bračić	2	
	▪ Colloquium II	AE	Matija Bračić	1	

L = Lectures; AE = Auditory Exercises; LE = Laboratory Exercises; S = Seminars



STUDENT OBLIGATIONS AND EXAMS

Conditions for obtaining signatures:

Attendance is mandatory and students are required to attend at least 80 % of the classes.

Written exam: During the semester two test will be held in the form of a seminar assignment. In case he does not pass both tests the student goes to the written part of the exam.

Oral exam: In order to attend oral exam student must pass written exam.

LITERATURE

a) Obligatory literature:

1. Authorized Power point presentations
2. Ashford, N., Stanton, H. P. M., Moore, C. A., Coutu, P., Beasley, J.R.: **Airport operations**, Third edition, McGraw-Hill, 2013.

b) Recommended literature:

1. ICAO Annex 14: **Aerodromes** Volume I: Aerodrome Design and Operations, Sixth edition, 2013
2. **Master Planning**, Airport Planning Manual, Part 1, International Civil Aviation Organization, Montreal, Canada, 1987.
3. Ashford, N., J, Mumayiz, S., Wright, P. H.: **Airport Engineering**; Planning Design and Development of 21st Century Airports, Fourth Edition, John Wiley & Sons 2011.
4. deNeufville, R., Odoni, A.: **Airport Systems**, Planning, Design and Management, McGraw-Hill, Second Edition, 2013.
5. Kazda, A., Caves, R. E.: **Airport Design and Operations**, Second Editions, Elsevier, 2013.



METHODOLOGY OF THE IMPLEMENTATION OF THE COURSE PLAN

1. LECTURES

In the course of the lectures the theoretical framework of the curriculum is presented on the Power Point presentations and followed by practical examples.

2. AUDITORIAL EXERCISES

In the course of exercises students are required to practice diverse calculations solving challenges in order to define all necessary parameters for an airport system. Students are provided by complete authorized instructional material in print form.

Note: Individual and/or group viewing negative written test

Individual at the time of consultation or a designated period after each colloquium and / or written exam. If necessary and at the request of a group of students in the form post exam exercises in order to explain the most common mistakes typical, after discussion with the team responses to individual student issues.



3. DOCUMENTATION

Students sign attendance list prior to every class

4. SCORING SYSTEM

Table 1 The scoring system for the monitoring of students and explained credit values in ECTS credits

no	Segment:	Required credits to be achieved:		Remark:	ECTS credits
		Min.	Max.		
1.	Presence in lectures:	10	10	Presence $\geq 80\%$	1
2.	Seminar paper (mandatory):	40	70	Preparation at home and oral presentation at the time of consultation <i>Replacement items 3. and 4.</i>	2
3.	Colloquies (written 2x per semester):	$\Sigma 40$	$\Sigma 70$	Numeric part (tasks)	$\Sigma 2$
4.	Written exam (terms):	40	70	<i>Replacement items 2. and 3.</i>	2
5.	The verbal part of the exam:	10	20	Theoretical part with lectures	2
Σ	Overall points:	$\Sigma 60$	$\Sigma 100$	Overall ETCS points:	$\Sigma 5$



Table 2 - Explanation of the credit values in evaluations

CREDITS:	Estimate based on attendance, seminar paper and two colloquies (or written exam) - [4 ECTS]:	The final score [5 ECTS]:
60 - 70	Sufficient (2)	Exemption from the written part of the exam, the final score after oral exam
70 - 80	Good (3)	
80 - 90	Very good (4)	
90 - 100	Excellent (5)	Exemption from verbal parts of exam

All 5 ECTS can be gained in total only if the student has received a positive opinion on the oral part of the exam, or according to Table 2 free verbal parts of exam, the student is in index 5 credits recorded simultaneously with the entry of the final grade.

Information for students (scoring system, implementation plan, learning outcomes, syllabus, literature, consulting teachers, announcement of results of examinations or colloquium, and all other information):

- <https://moodle.srce.hr/2025-2026/>
- <http://www.fpz.unizg.hr>

Student assistants: Additional individual work with the students through individual consultations for assignments from auditory exercises and / or research designs from laboratory exercises, for optional homework, as well as for insight into the negatively written part of the exam.