

# SYLLABUS

## 1. Data about the program of study

1.1	Institution	The Technical University of Cluj-Napoca
1.2	Faculty	Faculty of Civil Engineering
1.3	Department	Railways, Roads and Bridges
1.4	Field of study	Civil Engineering
1.5	Cycle of study	Master of Science
1.6	Program of study/Qualification	Transportation Infrastructure Engineering/MSc
1.7	Form of education	Full time
1.8	Subject code	18.00

## 2. Data about the subject

2.1	Subject name				<b>AIRPORT ENGINEERING</b>						
2.2	Subject area				Civil Engineering						
2.3	Course responsible/lecturer				Assist. prof. Ciont Nicolae, PhD - nicolae.ciont@cfdp.utcluj.ro						
2.4	Teachers in charge of seminars				Assist. prof. Ciont Nicolae, PhD - nicolae.ciont@cfdp.utcluj.ro						
2.5	Year of study	II	2.6	Semester	1	2.7	Assessment	E	2.8	Subject category	DA DI

## 3. Estimated total time

3.1	Number of hours per week	2	3.2	of which, course:	1	3.3	applications:	1
3.4	Total hours in the curriculum	28	3.5	of which, course:	14	3.6	applications:	14
Individual study								hours
Manual, lecture material and notes, bibliography								28
Supplementary study in the library, online and in the field								26
Preparation for seminars/laboratory works, homework, reports, portfolios, essays								14
Tutoring								2
Exams and tests								2
Other activities								-
3.7	Total hours of individual study	72						
3.8	Total hours per semester	100						
3.9	Number of credit points	4						

## 4. Pre-requisites (where appropriate)

4.1	Curriculum	Roads I / II / III, Geotechnical eng.
4.2	Competence	Not necessary

## 5. Requirements (where appropriate)

5.1	For the course	<ul style="list-style-type: none"> <li>Students will attend class with their mobile phones turned off;</li> <li>Late arrival is unacceptable.</li> </ul>
5.2	For the applications	<ul style="list-style-type: none"> <li>Terms and deadlines are commonly set;</li> <li>Delays are only acceptable based on solid, justified reasons.</li> </ul>

## 6. Specific competences

Professional competences	<p>Knowledge on airport engineering:</p> <ul style="list-style-type: none"> <li>• general aspects;</li> <li>• air traffic information;</li> <li>• geometrical elements;</li> <li>• structural design;</li> <li>• accesibility;</li> <li>• passenger buildings;</li> <li>• cargo elements;</li> <li>• specific distresses;</li> <li>• bearing strength evaluation.</li> </ul>
Cross competences	<ul style="list-style-type: none"> <li>• using efficient and responsible work strategies, punctuality. integrity and responsibility, based on principles, norms and ethical values;</li> <li>• bibliographical study for personal and professional development, through continuous formation and efficient adaptation;</li> <li>• work as part of a team, on different hierarchical clustering.</li> </ul>

## 7. Discipline objectives (as results from the *key competences gained*)

7.1	General objective	Acquiring knowledge about designing and building airports.
7.2	Specific objectives	<ul style="list-style-type: none"> <li>• Developing theoretical and practical skills;</li> <li>• Acquiring the habit to consult specific standards and norms.</li> </ul>

## 8. Contents

8.1. Lecture (syllabus)	Teaching methods	Notes
Introduction	exposure, conversation	
Air traffic		
Geometric design		
Structural design		
Structural design		
Passenger buildings		
Other elements: environmental impact, sustainable development etc.		

## Bibliography

ICAO Annex 14;

Ashford N.J., Mumayiz S.A., Wright P.H. - Airport Engineering, 4th Ed., John Wiley & Sons Inc., 2011;

Ciont N. - Airport engineering, Ed. Matrix Rom București, 2020;

de Neufville R., Odoni A. - Airport Systems: Planning, Design, and Management, 2nd Ed., McGraw-Hill Education LLC, ISBN 978-0-07-177058-3, 2013;

Horonjeff R. et al. – Planning & Design of Airports, 5th ed., McGraw Hill, 2010;

Kazda A., Caves R.E. – Airport Design and Operation, 2nd ed., Elsevier, 2007;

RACR-AD-PETA 2/2015 Reglementare aeronautică civilă română "Proiectarea și exploatarea tehnică a aerodromurilor";

\*\*\*Technical norms.

8.2. Applications/Seminars	Teaching methods	Notes
Introduction. Wind rose	applications, discussion, calculations	Standards, norms, software
Runway orientation		
Geometrical design		
Structural design		
Structural design		
Checks and evaluation		
Design statement		
Bibliography *** standards and norms.		

## 9. Bridging course contents with the expectations of the representatives of the community, professional associations and employers in the field

The gained competencies will be used by engineers working in the field of airport design or construction.

## 10. Evaluation

Activity type	10.1 Assessment criteria	10.2 Assessment methods	10.3 Weight in the final grade
10.4 Course	Theoretical questions Case study	1 hr. written test 5 mins. interview	80 %
10.5 Applications	Project evaluation	Project presentation	20 %
10.6 Minimum standard of performance			
Exam grade $\geq 5$ ; Project $\geq 5$			

Date of filling in: 18.06.2025		Title Surname Name	Signature
	Lecturer	Assist. prof. Ciont Nicolae, eng., PhD	
	Teachers in charge of application	Assist. prof. Ciont Nicolae, eng., PhD	

Date of approval in the department Railways, Roads and Bridges	Head of department
19.06.2025	Assist. prof. Mihai-Liviu DRAGOMIR, eng., PhD
Date of approval in the faculty of Civil Engineering	Dean
25.06.2025	Prof. Daniela-Lucia MANEA, eng., PhD