

## 9.8 CE0924 – Airport Design

### (1) GENERAL

<b>SCHOOL</b>	ENGINEERING SCHOOL		
<b>ACADEMIC UNIT</b>	CIVIL ENGINEERING DEPARTMENT		
<b>LEVEL OF STUDIES</b>	UNDERGRADUATE		
<b>COURSE CODE</b>	CE0924	<b>SEMESTER</b>	9
<b>COURSE TITLE</b>	Airport Design		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>	
	3	5	
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Specialisation Course		
<b>PREREQUISITE COURSES:</b>			
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	Greek		
<b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>	Yes, if requested.		
<b>COURSE WEBSITE (URL)</b>	<a href="https://eclass.uniwa.gr/courses/CIV291/">https://eclass.uniwa.gr/courses/CIV291/</a>		

### (2) LEARNING OUTCOMES

<p><b>Learning outcomes</b> The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described.</p> <p>Consult Appendix A</p> <ul style="list-style-type: none"> <li>• Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</li> <li>• Descriptors for Levels 6, 7 &amp; 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</li> <li>• Guidelines for writing Learning Outcomes</li> </ul>
<p>Upon completion of the course, students will be able:</p> <ul style="list-style-type: none"> <li>• To understand the basic principles of airport design.</li> <li>• To understand the current trends in the air transport industry and their impact on airport planning.</li> <li>• To obtain the basic knowledge for the design and operation of airports and be able to use this knowledge in practice.</li> <li>• To conduct feasibility studies related to the planning and implementation of air transport infrastructures.</li> <li>• To obtain adequate knowledge in the field that will allow them to continue their studies at the post graduated level.</li> </ul>
<p><b>General Competences</b> Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and</p>

<i>appear below), at which of the following does the course aim?;</i>	
<i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i>	<i>Project planning and management</i>
<i>Adapting to new situations</i>	<i>Respect for difference and multiculturalism</i>
<i>Decision-making</i>	<i>Respect for the natural environment</i>
<i>Working independently</i>	<i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i>
<i>Team work</i>	<i>Criticism and self-criticism</i>
<i>Working in an international environment</i>	<i>Production of free, creative and inductive thinking</i>
<i>Working in an interdisciplinary environment</i>	<i>.....</i>
<i>Production of new research ideas</i>	<i>Others...</i>

Specifically, students will be able to perform:

- Search, analysis and synthesis of data and information, using the necessary technologies.
- Adapting to new situations
- Decision Making.
- Autonomous work
- Team work
- Working in an international environment
- Project planning and management

### (3) SYLLABUS

<p>The course includes the following sections</p> <ol style="list-style-type: none"> <li>1. Introduction. Airport characteristics and terminology. Airport operations. Greek airports. Types and characteristics of aircrafts.</li> <li>2. The changing airline industry: impacts on airport planning. Privatization and Deregulation. Commercialization. Hub airports. The rise of low cost carriers. Multi airport systems. Technological developments.</li> <li>3. Air transport demand analysis and forecasting. Uncertainty in airport planning. Forecasting models. Master plan. Dynamic Strategic planning.</li> <li>4. Airfield design. Airport classification codes and design standards. Airports layouts. Detailed geometric design. Runway length. Runway geometry. Runway orientation and wind coverage. Runway system. Aprons and taxiways.</li> <li>5. Site selection. Selection criteria. Obstacle limitation surfaces.</li> <li>6. Airfield capacity and airfield delays. Factors that affect airfield capacity. Models for computing runway capacity.</li> <li>7. Air traffic control management.</li> <li>8. Passenger Building design. Configuration of passenger buildings. Design of passenger buildings.</li> <li>9. Ground access to the airport and distribution. Automated people movers.</li> <li>10. Special issues. Demand Management. Environmental impacts.</li> </ol>
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### (4) TEACHING and LEARNING METHODS - EVALUATION

<b>DELIVERY</b> <i>Face-to-face, Distance learning, etc.</i>	Face-to-face												
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b> <i>Use of ICT in teaching, laboratory education, communication with students</i>	Teaching using ICT. Communication with students through email and eclass online platform. The course's notes, the project, the exercises, as well as related examples are uploaded on course website.												
<b>TEACHING METHODS</b> <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i>  <i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	<table border="1"> <thead> <tr> <th style="text-align: center;"><b>Activity</b></th> <th style="text-align: center;"><b>Semester workload</b></th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td style="text-align: center;">39</td> </tr> <tr> <td>Study and analysis of bibliography</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Project</td> <td style="text-align: center;">25</td> </tr> <tr> <td>Educational visit</td> <td style="text-align: center;">10</td> </tr> <tr> <td>Problem solving</td> <td style="text-align: center;">21</td> </tr> </tbody> </table>	<b>Activity</b>	<b>Semester workload</b>	Lectures	39	Study and analysis of bibliography	30	Project	25	Educational visit	10	Problem solving	21
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Study and analysis of bibliography	30												
Project	25												
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Problem solving	21												

	Course total	125
<p><b>STUDENT PERFORMANCE EVALUATION</b>  <i>Description of the evaluation procedure</i></p> <p><i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>Final written examination (100%) which includes problem-solving, short answer questions, multiple and open-ended questions. In particular cases the examination is oral. Students may also submit written projects during the semester which are assessed for deriving the final grade in the course.</p> <p>The evaluation criteria are presented to the students prior to the examination. The partial score of each question of the written exam is included in the exam questions paper and the final grade is available to the students through the platform of the university. Students reserve the right to ask the examiner to provide comments on the assessment of their written exam concerning the score of each question and may also ask the examiner to explain their mistakes, if any.</p> <p>The evaluation language is Greek. For Erasmus students, English is the evaluation language.</p>	

## (5) ATTACHED BIBLIOGRAPHY

<p><u>Greek Bibliography:</u></p> <ol style="list-style-type: none"> <li>1. Profillidis. V.A, «Air transport - Airports», Papatotiriou Publishing, 2010</li> <li>2. De Neufville R., Odoni A. and Psaraki , «Airport Systems», Papatotiriou Publishing, 2008</li> </ol> <p><u>Foreign Bibliography:</u></p> <ol style="list-style-type: none"> <li>1. Horonjeff R., «Plannign and design of airports», Εκδόσεις McGraw-Hill, 1975</li> <li>2. Young S., Wells A., «Airport Planning and Management», Εκδόσεις McGraw-Hill, 2011</li> </ol> <p><u>Related academic journals:</u></p> <ol style="list-style-type: none"> <li>1. Transportation Research Record</li> <li>2. Transport Policy</li> <li>3. Journal of International Transportation</li> <li>4. European Transportation Research Record</li> <li>5. Journal of European Transport</li> <li>6. Journal of Transportation Research Forum</li> <li>7. Transportation Science</li> <li>8. Transportation Research: Parts A: Policy and Practice</li> <li>9. Transportation Research: Parts B: Methodological</li> <li>10. Transportation Research: Parts C: Emerging Technologies</li> <li>11. Transportation Research: Parts D: Transport and Environment</li> <li>12. International Journal of Sustainable Transportation</li> <li>13. Transportation Planning and Technology</li> <li>14. Transport Reviews</li> <li>15. Transportation Journal</li> <li>16. Research in Transportation Business and Management</li> </ol>
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