

Course Title	ADVANCED DESIGN APPLICATIONS				
Course Code	MGT 328				
Course Type	Elective				
Level	Undergraduate				
Year / Semester	Year 4 / Semester 7				
Teacher's Name	Panagiotis Roupas				
ECTS	6	Lectures / week	3	Laboratories / week	
Course Purpose and Objectives	<p>This course aims to set the basic elements, principles and methodologies in the emerging and rapidly developing field of spatial analysis and visualisation. Through this course, students explore and analyse data, develop data mining skills, and learn to apply visual design principles to their research output. Data mining, data analytics, and data visualisation seek to explore new ways of untangling the complexity of data through design.</p>				
Learning Outcomes	<p>Upon completion of the course students will:</p> <ul style="list-style-type: none"> - Define a significant range of skills, techniques, tools, practices and/or materials which are associated with data mining and data visualisation. - Demonstrate research activities and set achievable intermediate goals appropriate to a project of advanced research. Employ analytical and methodological skills in developing design concepts. - Analyse and explore tools, skills, and production methods of emergent technologies in design media, focusing on creative visualisation, analysis and utilization of data. - Identify the crucial role of perception of information and analyze a large and complex body of information. - Move from design standardization to specialized application. 				
Prerequisites	None	Required	None		

Course Content	<p>The course is divided into three parts:</p> <p>1. Explore data fields: The transition from traditional design objectives to exploring big data in order to find innovative objectives.</p> <p>2. Data mining: Analysing and selecting/grouping/typologizing data sets.</p> <p>3. Data Visualisation: Visualise composite and hybrid data sets to better understand complexity and reveal new design patterns.</p>						
Teaching Methodology	<ul style="list-style-type: none"> • Studio work • Visual presentations • Conceptual models and drawings • Lectures • Project briefing • Monitor discussions • Visual research methodologies • Brainstorming techniques • Concept development processes • Interaction and collaborative learning • Guest speakers • Personal research, realization and manipulation in project work • Continuous evaluation and assessment • Extended references and bibliography 						
Bibliography	<p>Lima, M. (2013). <i>Visual complexity. Mapping patterns of information</i>. New York: Princeton Architectural Press.</p> <p>Rendgen S., Wiedemann, J. <i>Information Graphics</i>. TASCHEN, 2018.</p> <p>Kirk, A. <i>Data Visualisation</i>. Sage Publications, 2019.</p> <p>Roger F. Malina, Carol Strohecker, and Carol LaFayette, eds., <i>Steps to an Ecology of Networked Knowledge and Innovation: Enabling New Forms of Collaboration among Sciences, Engineering, Arts, and Design</i> (Cambridge, MA: MIT Press, 2012)</p>						
Assessment	<table border="0"> <tr> <td>Participation</td> <td>20%</td> </tr> <tr> <td>Midterm Review</td> <td>30%</td> </tr> <tr> <td>Final Review</td> <td>50%</td> </tr> </table>	Participation	20%	Midterm Review	30%	Final Review	50%
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Language	English						