

Course title	Disruptive Technologies and Digital Transformation				
Course code	DIS507				
Type of lesson	Compulsory				
Level	Postgraduate				
Year /Semester	1 <sup>st</sup> / 1 <sup>st</sup>				
ECTS	7.5	Lectures/ week	1	Workshops/ week	-
Aim and objectives of the course	<p><b>Course Purpose</b></p> <p>The course " Disruptive Technologies " aims to describe and analyse the innovative technologies of our time, helping students to understand their characteristics and how they can create new opportunities for businesses.</p> <p><b>Course Objectives</b></p> <p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>• Description of the theory of technological innovation.</li> <li>• Critical thinking analysis of emerging technologies.</li> <li>• Comparison of positive and negative effects of technologies.</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>• Demonstrate emerging technologies from a technical point of view.</li> <li>• Designing strategies based on technological innovation.</li> <li>• Management of case studies and research projects.</li> </ul> <p><b>Capabilities</b></p> <ul style="list-style-type: none"> <li>• Explain the changes that emerging technologies are bringing to the market.</li> <li>• Linking technologies to competitive advantage.</li> <li>• Presenting technological innovation as a lifelong learning skill.</li> </ul>				
Learning outcomes	<p><b>Description</b></p> <ul style="list-style-type: none"> <li>• [LO1] Defining the different forms of innovation.</li> <li>• [LO2] Definition of technological innovation and its importance for businesses.</li> <li>• [LO3] Description of the impact of technological innovation on individuals, businesses and society.</li> <li>• [LO4] Explaining the importance of technology strategy for business</li> </ul> <p><b>Analysis and Comparison</b></p> <ul style="list-style-type: none"> <li>• [LO5] Exploring the key areas of a company's technology strategy.</li> </ul>				

	<ul style="list-style-type: none"> <li>• [LO6] Discussion of the differences in the areas of technology strategy for new and established firms.</li> <li>• [LO7] Analysis of the use of the Abernathy-Utterback technology evolution model.</li> <li>• [LO8] Comparison of the complementary uses of data storage and Big Data technologies.</li> </ul> <p><b>Implementation and Design</b></p> <ul style="list-style-type: none"> <li>• [LO9] Designing corporate strategies based on competitive advantage based on Big Data.</li> <li>• [LO10] Presenting technological innovation as a lifelong learning skill.</li> </ul>		
Prerequisites	-	Required	-
Course content	<p><b>Week 1:</b> Introduction to technological innovation</p> <p><b>Week 2:</b> Evolution of technology</p> <p><b>Week 3:</b> Sources of Innovation</p> <p><b>Week 4:</b> Capturing value from technological innovation</p> <p><b>Week 5:</b> Project selection</p> <p><b>Week 6:</b> Crowdfunding</p> <p><b>Week 7:</b> Big Data</p> <p><b>Week 8:</b> Internet of Things</p> <p><b>Week 9:</b> Cybersecurity</p> <p><b>Week 10:</b> Machine Vision</p> <p><b>Week 11:</b> Artificial Intelligence</p> <p><b>Week 12:</b> Blockchain</p> <p><b>Week 13:</b> Review- Preparations for the final exams.</p>		
Teaching methodology	<p>Mix of interactive lectures, active learning techniques and activities. More precisely:</p> <ul style="list-style-type: none"> <li>• Interactive Lectures</li> <li>• Notes and PowerPoint Presentations in digital format through the electronic platform</li> <li>• Basic textbook(s) and additional bibliography</li> <li>• Assignments</li> <li>• Interactive Activities</li> </ul>		

	<ul style="list-style-type: none"> <li>• Discussions in Forums through the electronic platform of real word case studies</li> <li>• Web links</li> <li>• Critical reflection on research article</li> <li>• Peer review on group working and discussion in forum</li> <li>• Educational videos on real world case studies and critical discussion in forum</li> </ul>
Bibliography	<p><b><i>Compulsory bibliography</i></b></p> <ul style="list-style-type: none"> <li>• Garry D. Bruton and Margaret White, The strategic management of technology and innovation, Kritiki Publications SA</li> <li>• "Technology, Innovation and Entrepreneurship", Konstantello</li> <li>• Kalogerou, G. 2015. Management and development of innovations. [Text chapter]. In Kalogirou, G., Tsakanikas, A., Siokas, E., Panagiotopoulos, P., Protogerou, A., Mavrotas, G. 2015. Organization and Business Administration for Engineers. [Athens, Athens, Greece Academic Libraries. Chapter 9.</li> </ul> <p><b><i>Additional bibliography</i></b></p> <ul style="list-style-type: none"> <li>• Scott A. Shane, Technology Strategy for Managers and Entrepreneurs, Pearson, 2014</li> <li>• Melissa A. Schilling, Strategic Management of Technological Innovation, 5th edition, McGraw-Hill, 2017</li> </ul> <p><b><i>Hyperlinks, audiovisual material and other sources</i></b></p> <ul style="list-style-type: none"> <li>• Karpouzis E. (2023), "The use of Big Data by micro and small enterprises", Informative Notes FHW GSEBEE 23/2023, Athens: FHW GSEBEE, p. 28, p. 28.</li> <li>• Narayanana, V., Managing Technology and Innovation for Competitive Advantage, Upper Saddle River, NJ: Prentice Hall, 2001</li> <li>• Rajkumar Buyya, Amir Vahid Dastjerdi, Internet of Things Principles and Paradigms, Morgan Kaufmann; 1 edition, 2016, pp. 3-28</li> <li>• Miorandi D, Sicari S, De Pellegrini F, Chlamtac I. Internet of things: vision, applications and research challenges. Ad Hoc Networks 2012;10(7):1497-516.</li> <li>• Marc Pilkington, Blockchain Technology: Principles and Applications, 2016</li> <li>• Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, Bitcoin and Cryptocurrency Technologies, Princeton University Press, 2016</li> <li>• Barnes, D., Blockchain manoeuvres: applying Bitcoin's technology to banking. The Banker, 2015</li> </ul>

	<ul style="list-style-type: none"> <li>• Russell, Stuart J., and Peter Norvig. Artificial intelligence: a modern approach. Malaysia; Pearson Education Limited, 2016 (Section 2)</li> <li>• Padgham, Lin, and Michael Winikoff. developing intelligent agent systems: a practical guide. vol. 13. John Wiley &amp; Sons, 2005.</li> <li>• Teahan, William John. Artificial Intelligence-Agents and Environments. BookBoon, 2010. (Free ebook) (Module 1, Module 2)</li> <li>• Goodfellow, Ian, et al. Deep learning. vol. 1. Cambridge: MIT press, 2016 (Free Access).</li> <li>• Annadurai, S.. Fundamentals of Digital Image Processing. Pearson India. Kindle Edition.</li> <li>• Digital Image Processing Tutorials: <a href="https://www.tutorialspoint.com/dip/image_processing_introduction.htm">https://www.tutorialspoint.com/dip/image_processing_introduction.htm</a> (Free)</li> <li>• Chatzichristofis, Savvas A., and Yiannis S. Boutalis. Compact Composite Descriptors for Content Based Image Retrieval: Basics, Concepts, Tools. VDM Verlag, 2011.</li> <li>• Moleskis, M., &amp; Alegre, I. (2018) Crowdfunding: A Short Past and Long Future, available at SSRN 3163006.</li> <li>• Alegre, I., &amp; Moleskis, M. (2019). Beyond Financial Motivations in Crowdfunding: A Systematic Literature Review of Donations and Rewards, VOLUNTAS: International Journal of Voluntary and Nonprofit Organizations, 1-12.</li> <li>• McKinsey. the committed innovator: a discussion with investor Kevin O'Leary. <a href="#">link</a>.</li> <li>• Interview with Konstantinos Daskalakis. <a href="#">Link</a>.</li> <li>• Google course: Making friends with Machine Learning. Free. <a href="#">Link</a>.</li> </ul>																																																												
Evaluation	<table border="1"> <thead> <tr> <th></th> <th>Percent age</th> <th>CL O1</th> <th>CL O2</th> <th>CL O3</th> <th>CL O4</th> <th>CL O5</th> <th>CL O6</th> <th>CL O7</th> <th>CL O8</th> <th>CL O9</th> <th>CLO 10</th> </tr> </thead> <tbody> <tr> <td>4 Interactive Activities</td> <td>20%</td> <td></td> <td>√</td> <td></td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> <td>√</td> </tr> <tr> <td>Main Coursework</td> <td>20%</td> <td>√</td> <td></td> <td></td> <td>√</td> <td>√</td> <td>√</td> <td></td> <td>√</td> <td>√</td> <td>√</td> </tr> <tr> <td>Final Exam</td> <td>60%</td> <td>√</td> <td></td> <td>√</td> <td>√</td> <td>√</td> <td></td> <td>√</td> <td>√</td> <td>√</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		Percent age	CL O1	CL O2	CL O3	CL O4	CL O5	CL O6	CL O7	CL O8	CL O9	CLO 10	4 Interactive Activities	20%		√		√	√	√	√	√	√	√	Main Coursework	20%	√			√	√	√		√	√	√	Final Exam	60%	√		√	√	√		√	√	√													
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