<table>
<tr><td>Course title</td><td colspan="5">Disruptive Technologies and Digital Transformation</td></tr>
<tr><td>Course code</td><td colspan="5">IS507</td></tr>
<tr><td>Type of lesson</td><td colspan="5">Compulsory</td></tr>
<tr><td>Level</td><td colspan="5">Postgraduate</td></tr>
<tr><td>Year /Semester</td><td colspan="5">1st / 1st</td></tr>
<tr><td>ECTS</td><td>7.5</td><td>Lectures/ week</td><td>1</td><td>Workshops/ week</td><td>-</td></tr>
<tr><td>Aim and objectives of the course</td><td colspan="5">Course Purpose
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.

Course Objectives
Knowledge
• Description of the theory of technological innovation.
• Critical thinking analysis of emerging technologies.
• Comparison of positive and negative effects of technologies.
Skills
• Demonstrate emerging technologies from a technical point of view.
• Designing strategies based on technological innovation.
• Management of case studies and research projects.
Capabilities
• Explain the changes that emerging technologies are bringing to the market.
• Linking technologies to competitive advantage.
• Presenting technological innovation as a lifelong learning skill.</td></tr>
<tr><td>Learning outcomes</td><td colspan="5">Description
• [LO1] Defining the different forms of innovation.
• [LO2] Definition of technological innovation and its importance for businesses.
• [LO3] Description of the impact of technological innovation on individuals, businesses and society.
• [LO4] Explaining the importance of technology strategy for business
Analysis and Comparison
• [LO5] Exploring the key areas of a company's technology strategy.</td></tr>
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	• [LO6] Discussion of the differences in the areas of technology strategy for new and established firms. • [LO7] Analysis of the use of the Abernathy-Utterback technology evolution model. • [LO8] Comparison of the complementary uses of data storage and Big Data technologies. **Implementation and Design** • [LO9] Designing corporate strategies based on competitive advantage based on Big Data. • [LO10] Presenting technological innovation as a lifelong learning skill.		
Prerequisites	-	**Required**	-
Course content	**Week 1:** Introduction to technological innovation **Week 2:** Technology Evolution and Disruptive Innovation **Week 3:** Sources of innovation and technological development **Week 4:** Evaluation of innovations: Technological Life Cycle **Week 5:** Selection of innovative projects and Proof of Concept **Week 6:** Crowdfunding and strategies **Week 7:** Big Data and Artificial Intelligence **Week 8:** Internet of Things (IoT) **Week 9:** Cyber Security and Data Protection **Week 10:** Machine Vision and Automated Systems **Week 11:** Blockchain, Smart Contracts and NFT **Week 12:** Cloud Computing and Technology Services **Week 13:** Review- Preparations for the final exams.		
Teaching methodology	Mix of interactive lectures, active learning techniques and activities. More precisely: • Interactive face-to-face lectures • Notes and PowerPoint Presentations in digital format through the electronic platform • Basic textbook(s) and additional bibliography • Assignments • Interactive Activities • Discussions of real word case studies		

	• Web links • Critical reflection on research article • Peer review on group working and discussion • Educational videos on real world case studies and critical discussion in forum
Bibliography	***Compulsory bibliography*** • Garry D. Bruton and Margaret White, The strategic management of technology and innovation, Kritiki Publications SA • "Technology, Innovation and Entrepreneurship", Konstantello • 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. ***Additional bibliography*** • Scott A. Shane, Technology Strategy for Managers and Entrepreneurs, Pearson, 2014 • Melissa A. Schilling, Strategic Management of Technological Innovation, 5th edition, McGraw-Hill, 2017 ***Hyperlinks, audiovisual material and other sources*** • 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. • Narayanana, V., Managing Technology and Innovation for Competitive Advantage, Upper Saddle River, NJ: Prentice Hall, 2001 • Rajkumar Buyya, Amir Vahid Dastjerdi, Internet of Things Principles and Paradigms, Morgan Kaufmann; 1 edition, 2016, pp. 3-28 • 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. • Marc Pilkington, Blockchain Technology: Principles and Applications, 2016 • Arvind Narayanan, Joseph Bonneau, Edward Felten, Andrew Miller and Steven Goldfeder, Bitcoin and Cryptocurrency Technologies, Princeton University Press, 2016 • Barnes, D., Blockchain manoeuvres: applying Bitcoin's technology to banking.The Banker, 2015 • Russell, Stuart J., and Peter Norvig. Artificial intelligence: a modern approach. Malaysia; Pearson Education Limited, 2016 (Section 2)

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Padgham, Lin, and Michael Winikoff. developing intelligent agent systems: a practical guide. vol. 13. John Wiley & Sons, 2005.
Teahan, William John. Artificial Intelligence-Agents and Environments. BookBoon, 2010. (Free ebook) (Module 1, Module 2)
Goodfellow, Ian, et al. Deep learning. vol. 1. Cambridge: MIT press, 2016 (Free Access).
Annadurai, S.. Fundamentals of Digital Image Processing. Pearson India. Kindle Edition.
Digital Image Processing Tutorials: https://www.tutorialspoint.com/dip/image_processing_introduction.htm (Free)
Chatzichristofis, Savvas A., and Yiannis S. Boutalis. Compact Composite Descriptors for Content Based Image Retrieval: Basics, Concepts, Tools. VDM Verlag, 2011.
Moleskis, M., & Alegre, I. (2018) Crowdfunding: A Short Past and Long Future, available at SSRN 3163006.
Alegre, I., & 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.
McKinsey. the committed innovator: a discussion with investor Kevin O'Leary. link.
Interview with Konstantinos Daskalakis. Link.
Google course: Making friends with Machine Learning. Free. Link.

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<tr><td>Evaluation</td><td>
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<tr><td></td><td>Percentage</td><td>CLO1</td><td>CLO2</td><td>CLO3</td><td>CLO4</td><td>CLO5</td><td>CLO6</td><td>CLO7</td><td>CLO8</td><td>CLO9</td><td>CLO10</td></tr>
<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>
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<tr><td>Language</td><td>English</td></tr>
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