COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF SOCIAL SCIENCES		
ACADEMIC UNIT	DEPARTMENT OF POLITICAL SCIENCE		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ΨΜΕΠ718	**SEMESTER**	**5th-8th**
COURSE TITLE	**Digital transformation and digital policies**		

INDEPENDENT TEACHING ACTIVITIES *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*	**WEEKLY TEACHING HOURS**		**CREDITS**
	3		**10**

Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).

COURSE TYPE *general background, special background, specialised general knowledge, skills development*	Special background, seminar
PREREQUISITE COURSES:	
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	**Greek**
IS THE COURSE OFFERED TO ERASMUS STUDENTS	**No**
COURSE WEBSITE (URL)	

(2) LEARNING OUTCOMES

Learning outcomes

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.
Consult Appendix A

- *Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area*
- *Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B*

Guidelines for writing Learning Outcomes

At the end of the course, students are expected to be able to:

1. understand the different types of digital policies and the relevant specialised features that formulate an emerging policy domain and a distinctive set of policy measures.
2. use their skills to understand the dimensions of the modern digital environment in terms of key technology areas, and their evolving interaction with a broad range of aligned economic realms, societal goals and policy strategies.
3. use their knowledge in conjunction to the basic analytical tools of policy planning, implementation and evaluation along with a thorough review provided throughout the course on highly relevant case studies (e.g. policy initiatives, national strategies, mission-oriented programmes).
4. exploit their knowledge and skills in the study and analysis of the multifold dimensions of the 'digital age' by understanding core concepts and processes related to the diffusion of digital technologies within the various sectors of the economy while exploring various ripple effects of digital transformation on a societal level (e.g. labor market, skills, ethical dimensions).

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

Search for, analysis and synthesis of data and information, with the use of the necessary technology *Adapting to new situations* *Working independently* *Team work* *Working in an international environment* *Working in an interdisciplinary environment* *Production of new research ideas*	*Production of free, creative and inductive thinking*

(3) SYLLABUS

The major subject of the course is the in-depth analysis of the emerging 'digital policies' domain. In this context, differentiated policy models are examined at the international level, while the key role of digital policies in the wider network of new industrial and development policies internationally is explored.

In view of this, a detailed and thorough overview of the basic structural elements and technological drivers that compose the emerging and fast-changing digital landscape ('digital transformation wave') is provided. In that respect, attention is given on relevant aspects and ripple effects derive from the current multifold digital transformation dynamics. Accordingly, the components of new digital policies are explored through the examination of specialised (horizontal and domain-specific) policy tools and policy measures.

Additionally, issues related to the effects of digital transformation at the level of labor market as well as issues related to the co-evolution of digital and green technologies and policies are addressed. Finally, the moral dimensions of the relationship between the digital growth and societal aspects are highlighted (e.g. ethical implications).

More specifically, the main sections of the course include:
• Key concepts and terms: introduction to the fundamental concepts of the emerging 'digital age' with emphasis on aspects related to the 'knowledge economy' and the 'intangible economy', the basic dynamics of technological-productive transformation and the wider social effects.
• Emerging technologies - the building blocks of the new 'digital age': explanation of the building blocks and contents of the new 'digital age'. In particular, a detailed overview of the key components and factors that compose the broader technology base of the current wave of 'digital transformation' is provided and analysed.
• Historical perspective and 'digital innovation' eras: exploration of the historical pathway of the emerging 'digital era' in relation to the development of new technological policy models.
• Artificial Intelligence as a general-purpose technology, and AI policies: exploration of issues related to the historical development of AI, the content of the specific technological concept as well as the core components that constitute its horizontal technological dimension (e.g. machine learning). The major focus of this section is the presentation and analysis of AI-targeted and focused policies at the international level.
• The emergence of a new field of digital policies: presentation of the major elements, paradigms and models of digital policies at the level of specialised policy tools and policy measures.
• Digital policies in a broad range of sectors: exploration of different policy strategies and policies supporting the digital transformation and transition of various economic and industrial sectors (case studies).
• Digital data policies: analysis of the multiple importance of digital data as an intangible asset (e.g. exploitation in productive and commercial activities) along with a thorough overview of data policies at international level.
• Digital transformation, labor market and skills: analysis of differentiated multi-level effects deriving from the digitisation and automation trends with a focus at the labor market level, the changing structure of occupations and the content of new skills policies and systems.
• Digital transformation and competition policy: analysis of key regulatory dimensions arising from the acceleration of the digital transformation. A particular attention is given at the presentation of case studies in different technological sub-sectors.
• Digital transformation, green technologies and green policies: exploration of issues related to the convergence of digital and green technology areas and analysis of the relevant mission-oriented policies.
• Technology and ethics: highlighting the key issues and ripple effects deriving from the rapid development of digital technology in different areas and application fields (e.g. Artificial Intelligence, activity tracking and data usage, privacy issues).

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY *Face-to-face, Distance learning, etc.*	*Face-to-face*
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY *Use of ICT in teaching, laboratory education, communication with students*	Use of ICT in teaching, course and educational materials and communication with students.
TEACHING METHODS *The manner and methods of teaching are described in detail.*	

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. *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*	***Activity*** / ***Semester workload*** Lectures and PC Labs — 60% Study and analysis of bibliography — 10% Essay writing — 30% **Course total** — **100%**
STUDENT PERFORMANCE EVALUATION *Description of the evaluation procedure* *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* *Specifically-defined evaluation criteria are given, and if and where they are accessible to students.*	The final grade depends on the quality of one assignment (30%) and the final exams (70%). The language of evaluation is Greek.

(5) ATTACHED BIBLIOGRAPHY

Major books:

- Brynjolfsson, E. & Mcafee, A. (2016) *The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies*, W. W. Norton & Company.

Bibliography:

- Agrawal, A., Gans, J & Goldfarb, A. (2018) *Prediction Machines: The Simple Economics of Artificial Intelligence*, Harvard Business Review Press.
- Arthur, B. (2009) *The Nature of Technology: What It Is and How It Evolves*, Free Press.
- Autor, D. (2019) *Work of the Past, Work of the Future,* Richard T. Ely Lecture, AEA Papers and Proceedings 2019, 109: 1–32.
- Autor, D. (2015) *Why Are There Still So Many Jobs? The History and Future of Workplace Automation,* Journal of Economic Perspectives, Summer, 29(3), 3–30.
- Baldwin, R. (2019) *The Globotics Upheaval: Globalization, Robotics, and the Future of Work*, Oxford University Press.
- Brynjolfsson, E., & Mitchell, T. (2017) *What can machine learning do*? Workforce implications, Science, 358(6370), 1530-1534.
- Dodgson, M., Gann, D. & Phillips, N. (Eds.) (2015) *The Oxford Handbook of Innovation Management,* Oxford University Press.
- Dodgson, M., Gann, D.M. and Salter, A. (2008) *The Management of Technological Innovation: The Strategy and Practice,* 2nd Edition, Oxford University Press, Oxford.
- Freeman, C. (2002) *As Time Goes By: From the Industrial Revolutions to the Information Revolution*, Oxford University Press.
- Gilbert, R. (2020) *Innovation Matters: Competition Policy for the High-Technology Economy,* The MIT Press.
- Haskel, J. & Westlake, S. (2018) *Capitalism without Capital: The Rise of the Intangible Economy*, Princeton University Press.
- Lee, K. (2019) *The Art of Economic Catch-up. Barriers, Detours and Leapfrogging in Innovation Systems*, Cambridge University Press.
- Mazzucato, M. (2021) *Mission Economy: A Moonshot Guide to Changing Capitalism,* Allen Lane.
- Mazzucato, M. (2018) *Mission-oriented innovation policies: challenges and opportunities,* Industrial and Corporate Change, Volume 27, Issue 5, October, pp. 803–815.
- Mazzucato, M. (2013) *The Entrepreneurial State*, Anthem Press.
- Mcafee, A. & Brynjolfsson, E. (2018) *Machine, Platform, Crowd: Harnessing Our Digital Future,* W. W. Norton & Company.
- Oqubay, A. et al, (2020) *The Oxford Handbook of Industrial Policy*, Oxford University Press, Oxford.
- Perez, C. (2002) *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages*,

Edward Elgar Pub.
- Ross, A. (2016) *The Industries of the Future*, Simon & Schuster.
- Tidd, J., Bessant, J. (2009) *Managing Innovation: Integrating Technological, Market and Organisational Change*, 4th Edition. John Wiley & Sons, Chichester.