

## COURSE OUTLINE

### (1) GENERAL

|                                                                                                                                                                                                                                                                       |                                                           |                              |                                |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|------------------------------|--------------------------------|
| <b>SCHOOL</b>                                                                                                                                                                                                                                                         | SCHOOL OF ECONOMICS, BUSINESS AND INTERNATIONAL STUDIES   |                              |                                |
| <b>ACADEMIC UNIT</b>                                                                                                                                                                                                                                                  | ECONOMIC SCIENCE                                          |                              |                                |
| <b>LEVEL OF STUDIES</b>                                                                                                                                                                                                                                               | POSTGRADUATE                                              |                              |                                |
| <b>COURSE CODE</b>                                                                                                                                                                                                                                                    | <b>ΕΔΟΠ18</b>                                             | <b>SEMESTER</b>              | <b>2<sup>ND</sup> Semester</b> |
| <b>COURSE TITLE</b>                                                                                                                                                                                                                                                   | <b>DIGITAL TRANSFORMATION AND AI IN THE PUBLIC SECTOR</b> |                              |                                |
| <b>INDEPENDENT TEACHING ACTIVITIES</b><br><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>                 |
| Lectures                                                                                                                                                                                                                                                              |                                                           | 3                            | 6                              |
|                                                                                                                                                                                                                                                                       |                                                           |                              |                                |
| Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).                                                                                                                                                     |                                                           |                              |                                |
| <b>COURSE TYPE</b><br><i>general background, special background, specialised general knowledge, skills development</i>                                                                                                                                                | SPECIAL BACKGROUND                                        |                              |                                |
| <b>PREREQUISITE COURSES:</b>                                                                                                                                                                                                                                          | No                                                        |                              |                                |
| <b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>                                                                                                                                                                                                                      | Greek                                                     |                              |                                |
| <b>IS THE COURSE OFFERED TO ERASMUS STUDENTS</b>                                                                                                                                                                                                                      | No                                                        |                              |                                |
| <b>COURSE WEBSITE (URL)</b>                                                                                                                                                                                                                                           |                                                           |                              |                                |

### (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

Upon successful completion of the course, students will be able to:

- Identify and explain the key concepts of Information Systems, Digital Transformation and Artificial Intelligence in the public sector.
- Evaluate the role of technology and innovation in improving efficiency, transparency and service to citizens through digital government.
- Analyse digital transformation strategies and propose interventions to improve organisational processes in the public sector.
- Apply basic data analysis and artificial intelligence techniques to support decision making and design of public policies.

- Interpret real-life examples of the use of digital tools and AI methods in public interest services and synthesise strategic implementation plans.
- Understand the challenges, risks and ethical issues associated with the use of AI and data in the public sector.
- Design and present a comprehensive digital transformation plan for a public organisation, taking into account organisational, technological and regulatory 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?*

|                                                                                                             |                                                                                                 |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| <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>                                                                                |
|                                                                                                             | <i>.....</i>                                                                                    |

- Analysis and synthesis of data and information, using the necessary technologies
- Autonomous assignment
- Group assignment
- Decision-making
- Adapting to new situations

## (3)SYLLABUS

### Week 1

- Introduction to Information Systems in the Public Sector
- Main categories of information systems
- The role and importance of Information Systems in the Public Sector

### Week 2

- Introduction to Digital Transformation
- Pillars of Digital Transformation
- The technological pillar of digital transformation (Blockchain, IoT, AI)

### Week 3

- Digital Transformation Strategies
- Linking Business Strategy and Digital Transformation Strategy
- Managing Culture and Organizational Change

### Week 4

- Redesigning and Digitizing Administrative Processes
- Robotic Process Automation (RPA)
- Agile Methods of Digital Transformation Project Management
- Innovation in Public Administration and Design Thinking

### Week 5

- Introduction to Artificial Intelligence
- Harnessing Artificial Intelligence in the Public Sector
- Case Studies

### Week 6

- Introduction to Decision Making with the Use of Artificial Techniques for analysing large volumes of data

### Week 7

|                                                                                         |
|-----------------------------------------------------------------------------------------|
| → Techniques for segmentation and inference                                             |
| → Application of segmentation and decision making techniques                            |
| → Practical examples                                                                    |
| Week 8                                                                                  |
| → Techniques for categorising data for decision making                                  |
| → Application of Data Categorization Techniques                                         |
| → Practical Examples                                                                    |
| Week 9                                                                                  |
| → Generative AI                                                                         |
| → Applications and Case Studies                                                         |
| → Creating Chatbots for Citizen Service                                                 |
| → Safety and Ethics of AI                                                               |
| Week 10                                                                                 |
| → Presentations of a Strategic Plan for Digital Transformation in a Public Organisation |
| → Course Evaluation                                                                     |

#### (4)TEACHING and LEARNING METHODS - EVALUATION

| <b>DELIVERY</b><br><i>Face-to-face, Distance learning, etc.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>IN PERSON</b>                                                                                                                                                                                                                                                                                                                                                                                                                          |                          |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| <b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b><br><i>Use of ICT in teaching, laboratory education, communication with students</i>                                                                                                                                                                                                                                                                                                                                                                                                     | → Use of ICT in teaching<br>→ Laboratory Exercises for solving complex problems of digital transformation in Public Organizations<br>→ Use of eclass in communicating with students and providing the research material of the Strategic Planning Assignment                                                                                                                                                                              |                          |
| <b>TEACHING METHODS</b><br><i>The manner and methods of teaching are described in detail.<br/> 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><br><br><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>                                  | <b>Activity</b>                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Semester workload</b> |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Lectures                                                                                                                                                                                                                                                                                                                                                                                                                                  | 30                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Answers to Case Studies                                                                                                                                                                                                                                                                                                                                                                                                                   | 30                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Study                                                                                                                                                                                                                                                                                                                                                                                                                                     | 55                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Assignment                                                                                                                                                                                                                                                                                                                                                                                                                                | 65                       |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Examinations                                                                                                                                                                                                                                                                                                                                                                                                                              | 3                        |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Total Course Load                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>183 ώρες</b>          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Course total                                                                                                                                                                                                                                                                                                                                                                                                                              |                          |
| <b>STUDENT PERFORMANCE EVALUATION</b><br><i>Description of the evaluation procedure</i><br><br><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><br><br><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i> | The final grade of the course is calculated as follows:<br><br>Assessment is based on a written final examination at the end of the semester in which the course is taught (50% of the grade) and on the basis of an assignment (50% of the grade).<br><br>The assessment criteria for the final written paper and the paper are communicated to students in the first lecture and are also indicated in the final examination questions. |                          |

## **(5)ATTACHED BIBLIOGRAPHY**

### Suggested Bibliography:

1. E. Turban, C. Pollard, G. Wood (2021) Information Technology for Management: driving digital transformation to increase local and global performance, growth and sustainability, 12th Edition, 2021, John Wiley
2. G. Dukidis (2019) The Digital Future. Sideris Publications.
3. Selected articles and case studies

### Related Scientific Journals

1. - MIS Quarterly, MIS Quarterly Executive, European Journal of Information Systems, Journal of the Association for Information Systems, Information Systems Research