



## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Digital Transformation for Institutional and Societal Change, PG_00072996                                                                                                                                                                                                                                                                                                                                                  |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
| Field of study                              | Technical Physics                                                                                                                                                                                                                                                                                                                                                                                                          |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
| Date of commencement of studies             | February 2026                                                                                                                                                                                                                                                                                                                                                                                                              |                                                          | Academic year of realisation of subject                                                                                                                                                                                                     |                                     | 2026/2027                                                                                                                                          |            |     |
| Education level                             | second-cycle studies                                                                                                                                                                                                                                                                                                                                                                                                       |                                                          | Subject group                                                                                                                                                                                                                               |                                     |                                                                                                                                                    |            |     |
| Mode of study                               | Full-time studies                                                                                                                                                                                                                                                                                                                                                                                                          |                                                          | Mode of delivery                                                                                                                                                                                                                            |                                     | e-learning                                                                                                                                         |            |     |
| Year of study                               | 1                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                          | Language of instruction                                                                                                                                                                                                                     |                                     | English<br>Language of instruction: English;<br>materials in English and Polish;<br>language of interaction: English or Polish (student's choice). |            |     |
| Semester of study                           | 2                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                          | ECTS credits                                                                                                                                                                                                                                |                                     | 2.0                                                                                                                                                |            |     |
| Learning profile                            | general academic profile                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | Assessment form                                                                                                                                                                                                                             |                                     | assessment                                                                                                                                         |            |     |
| Conducting unit                             | Department of Informatics In Management -> Faculty of Management and Economics -> Faculties of Gdańsk University of Technology                                                                                                                                                                                                                                                                                             |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                                                         |                                                          | dr Tomasz Janowski                                                                                                                                                                                                                          |                                     |                                                                                                                                                    |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | dr Tomasz Janowski                                                                                                                                                                                                                          |                                     |                                                                                                                                                    |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                                                                                                                                                                                                | Lecture                                                  | Tutorial                                                                                                                                                                                                                                    | Laboratory                          | Project                                                                                                                                            | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                                                                                                                                                      | 30.0                                                     | 0.0                                                                                                                                                                                                                                         | 0.0                                 | 0.0                                                                                                                                                | 0.0        | 30  |
|                                             | E-learning hours included: 30.0                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
|                                             | eNauczanie source address: <a href="https://enauczanie.pg.edu.pl/2025/course/view.php?id=7334">https://enauczanie.pg.edu.pl/2025/course/view.php?id=7334</a><br>Moodle ID: 7334 Digital Transformation for Institutional and Societal Change<br><a href="https://enauczanie.pg.edu.pl/2025/course/view.php?id=7334">https://enauczanie.pg.edu.pl/2025/course/view.php?id=7334</a>                                          |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
| Learning activity and number of study hours | Learning activity                                                                                                                                                                                                                                                                                                                                                                                                          | Participation in didactic classes included in study plan |                                                                                                                                                                                                                                             | Participation in consultation hours |                                                                                                                                                    | Self-study | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                                                                                                                                                      | 30                                                       |                                                                                                                                                                                                                                             | 2.0                                 |                                                                                                                                                    | 18.0       | 50  |
| Subject objectives                          | The course aims to develop a critical understanding of digital transformation as a multidimensional process that reshapes institutions and societies. It equips students with conceptual frameworks and analytical tools to evaluate how digital technologies influence institutional structures and governance arrangements, which, in turn, impact innovation processes, social well-being, and sustainable development. |                                                          |                                                                                                                                                                                                                                             |                                     |                                                                                                                                                    |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                             |                                                          | Subject outcome                                                                                                                                                                                                                             |                                     | Method of verification                                                                                                                             |            |     |
|                                             | [K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems                                                                                                                                                                                                                                                                                                         |                                                          | Explains the social, economic, legal, and ethical dimensions of digital transformation and justifies the need for interdisciplinary knowledge in understanding institutional and societal change.                                           |                                     | [SU2] Assessment of ability to analyse information                                                                                                 |            |     |
|                                             | [K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment                                                                                                                                                                                                                                                                   |                                                          | Demonstrates knowledge of fundamental concepts and theories from social, economic, legal, and humanistic sciences and explains their application to the analysis of digital transformation, institutional change, and societal development. |                                     | [SK2] Assessment of progress of work                                                                                                               |            |     |
|                                             | [K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications                                                                                                                                                                                                                                                                                            |                                                          | Applies knowledge from social, economic, legal, and humanistic sciences to analyze and solve problems related to digital transformation, institutional change, governance, inequality, and sustainable development.                         |                                     | [SW1] Assessment of factual knowledge                                                                                                              |            |     |

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
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| Subject contents                | Course content – lecture                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
|                                 | <div>1.   Lecture 1. Understanding Digital Transformation and Institutional Change</div> <div><ul style="list-style-type: none"><li>•   How do digital technologies transform institutions and societies?</li></ul></div> <div>2.   Lecture 2. Features and Drivers of Digital Transformation</div> <div><ul style="list-style-type: none"><li>•   What makes digital transformation fundamentally different from previous waves of technological change?</li></ul></div> <div>3.   Lecture 3. Dynamics of Institutional Transformation</div> <div><ul style="list-style-type: none"><li>•   How do institutions undergo digital transformation?</li></ul></div> <div>4.   Lecture 4. Digital Innovation and Institutional Capacity</div> <div><ul style="list-style-type: none"><li>•   How do digital technologies reshape innovation processes and institutional capabilities?</li></ul></div> <div>5.   Lecture 5. Digital Transformation, Public Value, and Well-Being</div> <div><ul style="list-style-type: none"><li>•   How can digital transformation contribute to societal well-being?</li></ul></div> <div>6.   Lecture 6. Digital Inequalities and Inclusive Transformation</div> <div><ul style="list-style-type: none"><li>•   Why does digital transformation create winners and losers?</li></ul></div> <div>7.   Lecture 7. Governing Digital Transformation for Sustainable Societal Impact</div> <div><ul style="list-style-type: none"><li>•   How can institutions govern digital transformation to achieve sustainable societal outcomes?</li></ul></div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
| Prerequisites and co-requisites | <ul style="list-style-type: none"><li>•   Knowledge - Possesses basic knowledge of institutions, governance, organizations, and contemporary social, economic, and technological processes relevant to digital transformation.</li><li>•   Skills - Is able to critically analyze social, organizational, and policy issues and interpret information from academic and professional sources.</li><li>•   Competences - Demonstrates readiness to engage in interdisciplinary learning and critically reflect on the societal implications of technological change.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
| Assessment methods and criteria | Subject passing criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Percentage of the final grade |
|                                 | Quiz                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 40.0%                         |
|                                 | Case study report                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20.0%                         |
|                                 | Policy brief                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 20.0%                         |
|                                 | Activity during lectures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 0.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20.0%                         |
| Recommended reading             | Basic literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <div>1.   E. Brynjolfsson and A. McAfee, The Second Machine Age, 2016</div> <div>2.   Kohli, R., &amp; Melville, N. P. (2019). Digital innovation: A review and synthesis. Information Systems Journal, 29(1), 200-223.</div> <div>3.   Hanelt, A., Bohnsack, R., Marz, D., &amp; Antunes Marante, C. (2021). A systematic review of the literature on digital transformation: Insights and implications for strategy and organizational change. Journal of management studies, 58(5), 1159-1197.</div> <div>4.   Cheng, C., Wang, L., Xie, H., &amp; Yan, L. (2023). Mapping digital innovation: A bibliometric analysis and systematic literature review. Technological Forecasting and Social Change, 194, 122706.</div> <div>5.   Calza, E., Dalla Benetta, A., Kostić, U., Mitton, I., Moraschini, M., Baillet, M. V. P., ... &amp; De-Prato, G. (2023). Analytical insights into the global digital ecosystem (DGTES) (No. JRC132991). Joint Research Centre.</div> <div>6.   ITU. Measuring digital development - ICT Development Index. 2025</div> <div>7.   Schoormann, T., Möller, F., Hoppe, C., &amp; vom Brocke, J. (2025). Digital Sustainability. Business &amp; Information Systems Engineering, 1-10.</div> |                               |

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|                                                                | Supplementary literature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <ol style="list-style-type: none"> <li>1. Janowski, T. (2015). <i>Digital Government Evolution: From Transformation to Contextualization</i>. <i>Government Information Quarterly</i>.</li> <li>2. Bertot, J., Estevez, E., Janowski, T. <i>Universal and contextualized public services: Digital public service innovation framework</i>. <i>Government Information Quarterly</i>, Elsevier 2016</li> <li>3. G. Unruh and D. Kiron, "Digital Transformation on Purpose," <i>MIT Sloan Manag. Rev.</i>, pp. 1–6, 2017.</li> <li>4. Kenneth C. Laudon and Jane P. Laudon. <i>Management information systems: Managing the digital firm</i>. 17th edition. Pearson Education. 2022</li> <li>5. Trinchini, L., &amp; Baggio, R. (2023). <i>Digital sustainability: Ethics, epistemology, complexity and modelling</i>. <i>First Monday</i>.</li> <li>6. Feroz, A. K., &amp; Kwak, M. (2024). <i>Data science and digital transformation for sustainability</i>. <i>Issues in Information Systems</i>, 25(1).</li> <li>7. Elia, G., Solazzo, G., Lerro, A., Pigni, F., &amp; Tucci, C. L. (2024). <i>The digital transformation canvas: A conceptual framework for leading the digital transformation process</i>. <i>Business Horizons</i>, 67(4), 381-398.</li> <li>8. Mühlburger, M., &amp; Krumay, B. (2024). <i>Towards a context-sensitive conceptualisation of digital transformation</i>. <i>Journal of Information Technology</i>, 39(4), 716-731.</li> <li>9. Soumitra Dutta, Bruno Lanvin (eds). <i>Network Readiness Index 2024. Building a Digital Tomorrow: Public-Private Partnerships for Digital Readiness</i>. 2024</li> <li>10. World Bank. <i>GovTech Maturity Index 2025. Tracking Public Sector Digital Transformation Worldwide</i>. 2025</li> </ol> |
|                                                                | eResources addresses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Example issues/<br>example questions/<br>tasks being completed | <ol style="list-style-type: none"> <li>1. <i>Digital transformation as institutional and societal change: beyond technology adoption.</i></li> <li>2. <i>The role of institutions and governance in shaping digital futures and public value.</i></li> <li>3. <i>Exponential technological change and its implications for institutions and society.</i></li> <li>4. <i>Datafication, platformization, and the emergence of digital ecosystems.</i></li> <li>5. <i>Organizational and institutional conditions enabling digital transformation.</i></li> <li>6. <i>Mechanisms of transformation: innovation, integration, scaling, and adaptation.</i></li> <li>7. <i>Artificial intelligence and automation as drivers of institutional innovation.</i></li> <li>8. <i>Human-machine collaboration and the transformation of work and decision-making.</i></li> <li>9. <i>Digital technologies and productivity growth in public and private sectors.</i></li> <li>10. <i>Digital public services and their contribution to societal well-being and quality of life.</i></li> <li>11. <i>Digital divides, social exclusion, and unequal access to opportunities.</i></li> <li>12. <i>Platform economies, algorithmic bias, and concentration of economic and social power.</i></li> <li>13. <i>Assessing the organizational, economic, and societal impacts of digital transformation</i></li> <li>14. <i>Governance strategies for sustainable, inclusive, and responsible digital transformation.</i></li> </ol> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Practical activities within<br>the subject                     | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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