

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                |                                                          |                                         |                                     |         |                                                                          |     |
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| Subject name and code                       | Digitization in Transport, PG_00169858                                                                                                                                                                                                                                                                                                                                                         |                                                          |                                         |                                     |         |                                                                          |     |
| Field of study                              | Economics                                                                                                                                                                                                                                                                                                                                                                                      |                                                          |                                         |                                     |         |                                                                          |     |
| Date of commencement of studies             | October 2025                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | Academic year of realisation of subject |                                     |         | 2027/2028                                                                |     |
| Education level                             | Bachelor's studies                                                                                                                                                                                                                                                                                                                                                                             |                                                          | Subject group                           |                                     |         | Obligatory subject group in the field of study<br>Optional subject group |     |
| Mode of study                               | part-time studies                                                                                                                                                                                                                                                                                                                                                                              |                                                          | Mode of delivery                        |                                     |         | at the university                                                        |     |
| Year of study                               | 3                                                                                                                                                                                                                                                                                                                                                                                              |                                                          | Language of instruction                 |                                     |         | Polish                                                                   |     |
| Semester of study                           | 6                                                                                                                                                                                                                                                                                                                                                                                              |                                                          | ECTS credits                            |                                     |         | 2.0                                                                      |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                                                                                                                       |                                                          | Assessment form                         |                                     |         |                                                                          |     |
| Conducting unit                             | Department of Transport Policy and Economic Integration -> Faculty of Economics -> Rector                                                                                                                                                                                                                                                                                                      |                                                          |                                         |                                     |         |                                                                          |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                             |                                                          | dr Dorota Książkiewicz                  |                                     |         |                                                                          |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |                                         |                                     |         |                                                                          |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                                                                                                                                                                    | Lecture                                                  | Tutorial                                | Laboratory                          | Project | Seminar                                                                  | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                                                                                                                          | 0.0                                                      | 10.0                                    | 0.0                                 | 0.0     | 0.0                                                                      | 10  |
|                                             | E-learning hours included: 0.0                                                                                                                                                                                                                                                                                                                                                                 |                                                          |                                         |                                     |         |                                                                          |     |
| 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                                                                                                                                                                                                                                                                                                                                                                          | 10                                                       |                                         | 3.0                                 |         | 37.0                                                                     | 50  |
| Subject objectives                          | The aim of the course is to familiarize students with the impact of advanced technological solutions on the development of transportation. The issues of dynamic changes in both passenger and freight transport will be considered in the context of addressing current problems in transportation systems (such as low efficiency, disintegration, environmental pollution, and congestion). |                                                          |                                         |                                     |         |                                                                          |     |

| Learning outcomes               | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Subject outcome                                                                                                          | Method of verification                                                                  |
|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|                                 | [EKONL3_W08] has knowledge of the processes of changing elements, enterprises and whole structures of economic organisations, as well as the processes of changing social institutions, knows what their causes, course, scale, consequences are and what the influence of external stakeholders is on them                                                                                                                                                                                                                                                                                                                                                                      | The student has the knowledge about the changes resulting from the digitalization of business processes in supply chains | [SW1] oral statement/ conversation/discussion<br>[SW5] implementation of a problem task |
|                                 | [EKONL3_K01] recognises the importance of economic knowledge in identifying and solving economic problems and of consulting experts when difficulties in solving them independently                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The student is able to use the knowledge of economics in solving problems related to digitalization of processes         | [SK1] oral statement/conversation/ discussion<br>[SK5] implementation of a problem task |
|                                 | [EKONL3_K05] correctly identifies, diagnoses and resolves professional dilemmas and different options for solutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | The student is able to propose creative solutions to problems related to the digital processes in transportation         | [SK1] oral statement/conversation/ discussion<br>[SK5] implementation of a problem task |
|                                 | [EKONL3_W02] has advanced knowledge of the different types of existing business entities and organisations and public institutions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | The student acquires the knowledge about various types of entities and businesses operating in transport industry        | [SW1] oral statement/ conversation/discussion<br>[SW5] implementation of a problem task |
|                                 | [EKONL3_W03] has advanced knowledge of the relations between economic agents and social organisations operating in the national, international and intercultural arenas                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | The student has the knowledge about the digitalization of business processes in the field of transportation              | [SW1] oral statement/ conversation/discussion<br>[SW5] implementation of a problem task |
|                                 | [EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | The student is able to forecast and plan the digitalization activities in a company                                      | [SU5] implementation of a problem task                                                  |
|                                 | [EKONL3_U03] is able to analyse the causes and course of specific economic and social processes and phenomena, and accurately analyse these phenomena using adequate methods and tools economic and social                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | The student is able to analyze the course and results of digital processes in transport industry                         | [SU5] implementation of a problem task                                                  |
| Subject contents                | 1. Development trends in passenger/freight transport technology<br><br>2. Automation in transportation (across various branches of transport)<br><br>3. Electronic toll collection for road transport<br><br>4. Utilization of modern technologies in tourism traffic management<br><br>5. IoT, Physical Internet<br><br>6. Digitalization in urban deliveries<br><br>7..Autonomous and low-emission technologies in transportation<br><br>8. Digital logistics platforms<br><br>9.. Cybersecurity in digital transport data<br><br>Students have the opportunity to discuss any doubts or difficulties encountered while solving problem-based tasks during consultation hours. |                                                                                                                          |                                                                                         |
| Prerequisites and co-requisites | Knowledge of the principles of operation of transport companies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                          |                                                                                         |

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| Assessment methods and criteria                                | Subject passing criteria | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Percentage of the final grade |
|                                                                | in-class discussion      | 0.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 20.0%                         |
|                                                                | problem solving task     | 0.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 80.0%                         |
| Recommended reading                                            | Basic literature         | <p>1. Bąk M., Borkowski P., Intelligent IT technologies used to improve the efficiency of regulations in European road transport - case of new generation tachographs, <i>Studia i Prace Kolegium Zarządzania i Finansów</i> nr 166/2018,</p> <p>2. Bąk M., Burniewicz J. Challenges for multimodal passenger transport, W: <i>Multimodal transport security : frameworks and policy applications in freight and passenger transport / Szyliowicz Joseph S.[i in.](red.), Comparative Perspectives on Transportation Security</i>, 2016, Edward Elgar, I</p> <p>3. Książkiewicz D., Usługi logistyczne w warunkach cyfryzacji gospodarki, Wydawnictwo UG, Gdańsk 2021</p> <p>4. Matusiewicz M., Logistics of the future - Physical Internet and its practicality, <i>Transportation Journal</i>, 2020, vol. 59, nr 2, s.200-214.</p> <p>5. Russo F., Comi A., Investigating the Effects of City Logistics Measures on the Economy of the City. <i>Sustainability</i> 2020, 12, 1439. <a href="https://doi.org/10.3390/su12041439">https://doi.org/10.3390/su12041439</a></p> |                               |
|                                                                | Supplementary literature | <p>1. Bąk M. Borkowski P., Young transport users perception of ICT solutions change , <i>Social Sciences, Multidisciplinary Digital Publishing Institute</i>, vol. 8, nr 8, 2019, s. 1-17, DOI:10.3390/socsci8080222, 40 punktów</p> <p>2. Bąk M., Borkowski P., Uwarunkowania i możliwości rozpowszechniania technologii teleinformatycznych (ICT) w transporcie pasażerskim, <i>Zeszyty Naukowe Uniwersytetu Gdańskiego. Ekonomia Transportu i Logistyka</i>, nr 49/2013, ISSN 0208-4821</p> <p>3. Bąk M., Ważna A., Informacja i zintegrowany bilet jako rozwiązania wspierające integrację transportu, <i>Zeszyty Naukowe Uniwersytetu Gdańskiego. Ekonomia Transportu i Logistyka</i>, Uniwersytet Gdanski, nr 45, 2012, s. 137-147</p>                                                                                                                                                                                                                                                                                                                                 |                               |
|                                                                | eResources addresses     | Adresy na platformie eNauczanie:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                               |
| Example issues/<br>example questions/<br>tasks being completed |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |
| Work placement                                                 | Not applicable           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                               |

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