# GDAŃSK UNIVERSITY OF TECHNOLOGY

## Subject card

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| Subject name and code | Planning of transport systems, PG_00062450 |
| Field of study | Transport |

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| Date of commencement of studies | February 2024 | Academic year of realisation of subject | 2024/2025 |
| Education level | second-cycle studies | Subject group | |
| Mode of study | Full-time studies | Mode of delivery | at the university |
| Year of study | 1 | Language of instruction | Polish |
| Semester of study | 2 | ECTS credits | 3.0 |
| Learning profile | general academic profile | Assessment form | assessment |

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| Conducting unit | Department of Transportation Engineering -> Faculty of Civil and Environmental Engineering |

| Name and surname of lecturer (lecturers) | Subject supervisor | dr inż. Krystian Birr |
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| | Teachers | dr inż. Krystian Birr |
| | | dr inż. Michał Urbaniak |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 15.0 | 0.0 | 15.0 | 15.0 | 0.0 | 45 |
| | 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 |
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| | Number of study hours | 45 | 5.0 | 25.0 | 75 |

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| Subject objectives | to explain what is transport planning, transport planning regulations,processes, methods nad computer programs |

| Learning outcomes | Course outcome | Subject outcome | Method of verification |
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| | [K7_U05] cooperates with other people in the implementation of team work, both as a leader and a team member, effectively achieving set goals | student knows methods of transport systems integration | [SU1] Assessment of task fulfilment |
| | [K7_W01] identifies in an in-depth way phenomena related to the field of study as well as theories describing them and possible methods of analyzing processes occurring in the life cycle of technical systems | The student knows the assumptions and structures of planning documents. Is able to develop assumptions regarding transport policy or transport plan for a city or region. | [SW1] Assessment of factual knowledge |
| | [K7_K01] recognizes the importance of knowledge related to the field of study in solving cognitive and practical problems | Knows the essence and procedures of making traffic forecasts using traffic simulation tools. | [SK5] Assessment of ability to solve problems that arise in practice |
| | [K7_K02] makes competent and ethical decisions, caring for the public interest and maintaining economic, social and environmental values | student can do diagnose of transport system | [SK5] Assessment of ability to solve problems that arise in practice |
| | [K7_U02] presents logical and solid arguments regarding the obtained results, through analysis, synthesis of information in various technical contexts, critically approaching their interpretation | student can design plans and projects of transport networks and interchanges | [SU1] Assessment of task fulfilment |

| Subject contents | LECTURES The objectives and the role of transport planning. Expected outcomes of transport planning. Basic relationships between transport and land use (interaction, means of transport, functional classifications). Sustainable development in transport. Planning levels (national, regional, corridor, local, etc.). Transport policy, its objectives and priorities. Contemporary directions and principles of transportation planning (including intermodal transport integration, integration with land use planning, integration with other spheres of planning.) Assessment of transport needs in short and long term planning. Planning assessment of mobility, security, capacity, environmental impact. A comprehensive study of transport behavior. Analyses of transport data (displacement, mobility, distribution of traffic, transportation demands, availability). Travel forecasts (models generation, spatial distribution, traffic distribution, network capacity). Planning of the transport system to achieve short-and long-term objectives. The stages of the development plan for transport infrastructure. Technical concepts of the development of transport networks. Planning the integrated transport points. Concepts and methodologies of evaluation of options (capacity, safety and impact on the environment, economic efficiency and financial viability). Strategies to mitigate transportation problems (mobility management, security management, software improvements, the application of ITS). Planning the development of automobile roads, rail and inland waterways. Planning the development of infrastructure of maritime and air transport. Urban transport planning. Public participation and partnership in the planning of transport networks. EXERCISES Selected calculations for planned transport network evaluation LABORATORY Traffic modeling with VISSUM |
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| Prerequisites and co-requisites | no requirements |

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
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| | exercises | 100.0% | 25.0% |
| | Written exam | 50.0% | 50.0% |
| | project | 100.0% | 25.0% |

| Recommended reading | Basic literature | 1. K. Wojewódzka Król, R. Rolbiecki: Infrastruktura transportu. Wydawnictwo UG, Gdańsk 2008. <br><br> 2. J. Neider: Transport międzynarodowy. PWE, Warszawa 2008. <br><br> 3. Współczesne technologie transportowe. L. Mindur (red.). Radom 2004. <br><br> 4. K. Chwesiuk, B. Wiśnicki, I. Kotowska: Perspektywy rozwoju przewozów intermodalnych w Polsce. Wydawnictwo Akademii Morskiej w Szczecinie, Szczecin 2008. <br><br> 5. Jacyna M.: Modelowanie i ocena systemów transportowych, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2009. <br> 6. Jacyna M. (red.): Kształtowanie systemów w wybranych obszarach transportu i logistyki, Wydawnictwo Politechniki Warszawskiej, Warszawa 2014. |
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| | Supplementary literature | 1. Zintegrowane łańcuchy transportu. I. Semenov (red.). Difin, Warszawa <br><br> 2. M. Madeyski, E. Lissowska, W. Morawski: Transport rozwój i integracja. WKiŁ, Warszawa 1987. <br><br> 3. J. Wesołowski, A. Zalewski: Integracja transportu szynowego w śródmieściu Łodzi. Warszawa 2009 |
| | eResources addresses | Adresy na platformie eNauczanie: |

| Example issues/ example questions/ tasks being completed | |
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| Work placement | Not applicable |

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