



Subject card

Subject name and code	Urban and road engineering, PG_00052660						
Field of study	Architecture						
Date of commencement of studies	October 2020	Academic year of realisation of subject			2022/2023		
Education level	first-cycle studies	Subject group			Obligatory subject group in the field of study Subject group related to scientific research in the field of study		
Mode of study	Full-time studies	Mode of delivery			at the university		
Year of study	3	Language of instruction			Polish English.		
Semester of study	6	ECTS credits			2.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Urban Design and Regional Planning -> Faculty of Architecture						
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. arch. Piotr Smolnicki					
	Teachers	dr inż. arch. Piotr Smolnicki					
Lesson types and methods of instruction	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: 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	30	2.0		18.0	50	
Subject objectives	The aim of the lectures is to prepare students for professional understanding and discussion skills in the field of urban and road engineering. In connection with the above, the didactic result of the lectures is the acquisition by students of the necessary knowledge needed for the correct use of specialist terms, understanding the relationship between specific needs, applied solutions and achieved effects.						
Learning outcomes	Course outcome	Subject outcome			Method of verification		
	[K6_W01] knows and understands construction problems, building and engineering issues related to building design; principles, solutions, constructions and building materials used in simple engineering tasks in the field of architectural and urban design	Gaining by students the necessary knowledge needed for the correct use of specialist terms in the field of urban and road engineering.			[SW2] Assessment of knowledge contained in presentation		
	[K6_U01] is able to use the experience gained during studies to critically analyze the conditions and formulate conclusions for design in an interdisciplinary context	Gaining by students the necessary knowledge needed to correctly understand the relationship between specific needs, applied solutions and achieved effects in the field of urban and road engineering.			[SU2] Assessment of ability to analyse information		

Subject contents	<p>Selected topics:</p> <ul style="list-style-type: none"> - a brief history of the creation and development of a modern street as a road for vehicular traffic; - presentation, comparison and explanation of basic concepts; - review and explanation of the meaning of international, national and local documents; - principles of universal design; - approach to the design process; - discussion of important components of engineering projects: lighting, greenery, water management, parking; - traffic management measures, such as traffic calming; - relations between the intensity of development and transport infrastructure; - discussion of key principles and paradoxes and non-intuitive laws related to transport infrastructure. 								
Prerequisites and co-requisites									
Assessment methods and criteria	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Subject passing criteria</th> <th style="width: 25%;">Passing threshold</th> <th style="width: 25%;">Percentage of the final grade</th> </tr> </thead> <tbody> <tr> <td>The way of presenting the selected topic.</td> <td>60.0%</td> <td>100.0%</td> </tr> </tbody> </table>	Subject passing criteria	Passing threshold	Percentage of the final grade	The way of presenting the selected topic.	60.0%	100.0%		
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Recommended reading	<p>Basic literature</p> <p>Basic literature:</p> <p>Appleyard, D., Lintell, M., & Gerson, M. S. (1981). <i>Livable streets</i>. Berkeley: University of California Press.</p> <p>Appleyard, D., Lynch, K., & Myer, J. R. (1971). <i>The View from the Road</i> (3rd printing). Cambridge [MA]: The Massachusetts Institute Technology.</p> <p>Gehl, J. (2010). <i>Cities for people</i>. Washington (DC), Covelo, London: Island Press.</p> <p>Gehl, J. (2010). <i>Life between buildings: Using public space</i> (6. ed., 2. issue). København: The Danish Architectural Press.</p> <p>Jacobs, J. (2002). <i>The death and life of great American cities</i>. New York: Random House (Original work published 1961).</p> <p>Montgomery, C. (2013). <i>Happy city: Transforming our lives through urban design</i> (Kindle edition; Reprint edition (November 12, 2013)). New York: Farrar, Straus and Giroux.</p> <p>Sadik-Khan, J., & Solomonow, S. (2016). <i>Streetfight: Handbook for an Urban Revolution</i> (Kindle Edition): Viking.</p> <p>Schwartz, S. I. (2015). <i>Street smart: The rise of cities and the fall of cars</i> (First edition; eBook; Kindle Edition). New York: Public Affairs.</p> <p>Shoup, D. C. (2011). <i>The High Cost of Free Parking</i> (Updated.). Chicago, Washington: American Planning Association (Original work published 2005).</p>								

Abiko, A. (2010). Urban Engineering: Concepts and Challenges. In Pina Filho, Armando Carlos de & A. C. d. Pina (Eds.), *Methods and Techniques in Urban Engineering*. InTech. Retrieved from https://edisciplinas.usp.br/pluginfile.php/5529410/mod_resource/content/1/UrbanEngineering.pdf

Bain, B. (2001). City and Regional Planning. In P. Finkelman (Ed.), *Encyclopedia of the United States in the nineteenth century* (pp. 217219). New York: Charles Scribner's Sons.

Benevolo, L. (1995). *Miasto w dziejach Europy. Tworzenie Europy*. Warszawa: Krag; Volumen (Original work published 1993).

Berg, N. (2013). Citizens as sensors: Our cities are talking, and were talking back. In S. Mathis & J. Cary (Eds.), *TED Books. City 2.0: The Habitat of the Future and How to Get There* (423463). Ted Conferences.

Braess, D. (2005). On a Paradox of Traffic Planning. *Transportation Science*, 39(4), 446450. <https://doi.org/10.1287/trsc.1050.0127>

City of Vancouver (2023, February 26). Urban planning, sustainable zoning, and development. Retrieved from <https://vancouver.ca/home-property-development/planning-zoning-development.aspx>

Downs, A. (2004). *Still stuck in traffic: Coping with peak-hour traffic congestion* (Rev. ed.). *James A. Johnson Metro Series*. Washington, D.C., Great Britain: Brookings Institution (Original work published 1992).

Economic Commission for Europe, Inland Transport Committee, Working Party on Road Traffic Safety (2016). *Automated driving* (Convention on Road Traffic (1968) No. Item 3 (c) of the provisional agenda). Geneva.

Gore, A., Jr. (2013). *The Future: Six Drivers of Global Change* (First Edition). New York: Random House.

Greenfield, A. (2015, November). *Transforming Cities: Implications for an Urban Age*. MIT Media Lab. Disrupting Mobility Summit, Media Lab Building, Cambridge, MA. Retrieved from <https://youtu.be/3oWjmQ0YU9I?list=PLFPx70Od9XB71TyGyWw-MwR-s6fAsKR10>

Heck, S., & Rogers, M. (2014). *Resource Revolution: How to Capture the Biggest Business Opportunity in a Century* (Kindle). Seattle: Amazon Publishing.

Jałowiecki, B., & Szczepański, M. S. (2006). *Miasto i przestrzeń w perspektywie socjologicznej* (2 (revisited)). *Wykłady z socjologii: Vol. 4*. Warszawa: Wydawnictwo Naukowe Scholar.

Jevons, W. S. (1866). *The Coal Question: An Inquiry Concerning the Progress of the Nation, and the Probable Exhaustion of Our Coal-Mines*. London: Macmillan and Co. (Original work published 1865). Retrieved from http://lf-ol.s3.amazonaws.com/titles/317/0546_Bk.pdf

La Peña, B. d. (2013). The autocatalytic city Bottom-up growth, driven by citizens, trumps central command. In S. Mathis & J. Cary (Eds.), *TED Books. City 2.0: The Habitat of the Future and How to Get There* (pp. 9971105). Ted Conferences.

Leeming, J. J. (2007). *Road accidents: Prevent or punish?*

	<p>Commendation by Lord Montagu of Beaulieu (reprint). Oswestry: Quinta Press (Original work published 1969).</p> <p>Rozporządzenie Ministra Infrastruktury z dnia 24 czerwca 2022 r. w sprawie przepisów techniczno-budowlanych dotyczących dróg publicznych, <i>Dz.U.</i> (2022).</p> <p>Monroe, E. B. (2001). Civil Engineering [Entry]: Bridges and Tunnels [Subentry]. In P. Finkelman (Ed.), <i>Encyclopedia of the United States in the nineteenth century</i> (pp. 222228). New York: Charles Scribner's Sons.</p> <p>Mumford, L. (1956). Restored Circulation, Renewed Life. In <i>A Harvest book: Vol. 13. From the ground up: Observations on contemporary architecture, housing, highway building, and civic design</i> (pp. 219229). New York: Harcourt, Brace, and Company (Original work published 1947).</p> <p>Mumford, L. (1961). <i>The city in history: Its origins, its transformations, and its prospects. A Harvest/HBJ book</i>. New York: Harcourt Brace Jovanovich.</p> <p>Mumford, L. (2010). <i>Technics and civilization</i>. Chicago: University of Chicago Press (Original work published 1934).</p> <p>Nash, B. (2005). <i>Car Tech of the Future</i>. History Channel: Cambou, Don. Retrieved from https://www.youtube.com/watch?v=iZZGpMjJr4A</p> <p>OECD (2007). <i>Glossary of statistical terms</i>. Retrieved from https://stats.oecd.org/glossary/index.htm</p> <p>O'Toole, R. (2011). Using Markets to Enhance Mobility. In J. Kuznicki (Ed.), <i>Cato Unbound. There Ain't No Such Thing as Free Parking (Cato Unbound Book 42011)</i> (331399). Cato Institute.</p> <p>PÅlsson, K. (2023). <i>Urban block cities: 10 Design Principles for Contemporary Planning</i>. Berlin: DOM publishers.</p> <p>Papandreou, T. (2015, November). <i>Mobility and the Sharing Economy</i>. MIT Media Lab. Disrupting Mobility Summit, Media Lab Building, Cambridge, MA. Retrieved from https://youtu.be/pZZyYMMBNHs?list=PLFPx70Od9XB71TyGyWw-MwR-s6fAsKRi0</p> <p>Peltzman, S. (1975, August). The Effects of Automobile Safety Regulation. <i>Journal of Political Economy</i>, 83(4), 677726. Retrieved from http://www.jstor.org/stable/1830396</p> <p>Poradnik projektowania uniwersalnego, <i>Zbiór zarządzeń Prezydenta Miasta Gdańska</i> (2021).</p> <p>Reichard, D. A. (2001). Cities and Urbanization. In P. Finkelman (Ed.), <i>Encyclopedia of the United States in the nineteenth century</i> (pp. 209217). New York: Charles Scribner's Sons.</p> <p>Sadik-Khan, J. (2015, November). <i>Transforming Cities: Implications for an Urban Age</i>. MIT Media Lab. Disrupting Mobility Summit, Media Lab Building, Cambridge, MA. Retrieved from https://youtu.be/3oWjmQ0YU9I?list=PLFPx70Od9XB71TyGyWw-MwR-s6fAsKRi0</p> <p>Salomon, A. (2018). <i>Ekonomiczne i pozaekonomiczne determinanty działalności transportowej: Wykład 02</i>. <i>Ekonomika transportu</i>, Gdynia. Retrieved from http://www.akademor.webd.pl/download/ET_w02.pdf</p>
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		<p>Ustawa z dnia 21 marca 1985 r. o drogach publicznych.</p> <p>Ustawa z dnia 19 lipca 2019 r. o zapewnieniu dostępności osobom ze szczególnymi potrzebami, <i>Dz.U.</i> (2019).</p> <p>Smolnicki, P. M. (2017). Mobility Oriented Development (MOD): Public-Private Partnership in Urban Parking & Traffic Management with the Use of Autonomous Automobiles, Car-sharing, Ridesharing Modes of Transport & Mobility as a Service (MaaS). In P. Golinska (Series Ed.) & A. Brdulak & H. Brdulak (Vol. Eds.), <i>EcoProduction: Environmental Issues in Logistics and Manufacturing. Happy City: How to plan and create the best livable area for the people</i> (1st ed., pp. 207220). Springer International Publishing. https://doi.org/10.1007/978-3-319-49899-7_12</p> <p>Solnit, R. (2001). <i>Wanderlust: A history of walking. Always Learning</i>. London: Penguin Books.</p> <p>Sterling, B. (2014). <i>The Epic Struggle of the Internet of Things</i>: Strelka Press.</p> <p>Thomson, J. W. (1972). <i>Methods of Traffic Limitation in Urban Areas</i> (No. No. 3 Work Paper).</p> <p>Thoreau, H. D. (1985). Walden; or Life in the Woods. In R. F. Sayre (Ed.), <i>The Library of America Series: Vol. 28. A Week, Walden, The Maine Woods, Cape Cod</i> (6th ed., pp. 321587). New York: The Library of America (Original work published 1854).</p> <p>Wysocki, M. (2015). <i>Przestrzeń publiczna przyjazna seniorom. Poradnik RPO</i>. Warszawa: Biuro Rzecznika Praw Obywatelskich.</p>
	eResources addresses	<p>Podstawowe</p> <p>https://www.goodreads.com/review/list/13367158-piotr-smolnicki?page=1&ref=nav_mybooks&shelf=mobility%2Ccities - Most of the literature is available as ebooks, not only in English.</p> <p>Adresy na platformie eNauczanie:</p> <p>Urban & Road Engineering - Moodle ID: 30158 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=30158</p>
Example issues/ example questions/ tasks being completed		<p>- Exemplary examples of metropolitan transport systems (city bikes, metropolitan railway, buses and trams).- Methods of traffic calming (Woonerf, pedestrian traffic prioritization).- From the construction to the demolition of road flyovers - examples from around the world.- Paradoxes and non-intuitive laws in transport.- Bikesharing, carsharing and ridesharing - pros and cons for the transport system.- Autonomous vehicles (personal, rented or collective) - opportunities and threats resulting from the use of various solutions.- On-street parking spaces and car parks (surface, cubature) - explanation of good and bad uses.</p>
Work placement		Not applicable