Bialystok University of Technology

Doctoral School

COURSE DESCRIPTION CARD

Course name	Forest management in a changing climate				
Course type	Optional	**Course code**		**ECTS credits**	1
Forms and number of hours	Lecture: 10 h	**Scientific discipline**	Forestry		
Course objectives	Familiarizing PhD students with issues related to forest management in a changing climate				
Course content	1. Climate change and forest. 2. Adaptation activities of the State Forests to climate change. 3. Tree growth under global climate change: management strategies 4. Future distribution basic forest-forming species: contrasting climate-response forecasts 5. Principles of social forest management				
Teaching methods	The multimedia presentation, information lecture, tasks for self-development				
Assessment method	Passing				

Symbol of learning outcome	**Learning outcomes**	**Reference to the learning outcomes for the field of study for the 8th level of Polish Qualification Framework (PRK)**	**Methods of assessing the learning outcomes**
LO1	The PhD student has knowledge about changes occurring in forests in connection with modern climatic trends.	SD_W1, SD_W2	Passing the lecture
LO2	The PhD student is able to formulate the scope of activities carried out in forests under conditions of changing climate.	SD_U1	Passing the lecture
LO3	The PhD student is able to determine the potential ranges of basic forest-forming species and the importance of community forests in modern forest management.	SD_U1	Passing the lecture

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Student workload (in hours)	
Lecture	10 / 0 / 0 / 0 / 0
Consultations	5
The unassisted student work	15
Implementation of project tasks and preparation for and participation in exams/tests	10
Total	40
ECTS credits	1

Basic references	1. Vacek Z., Vacek S., Jan Cukor J. 2023. European forests under global climate change: Review of tree growth processes, crises and management strategies. Journal of Environmental Management. Vol. 332, Page 117353. 2. Marozau A., Mielcarek M., Krok G., Paluch R., Chiliński K. 2021b. European silver fir – an alternative for the dying Norway spruce in Białowieża Forest? Folia Forestalia Polonica, Series A – Forestry, 2020, Vol. 62 (1), 150–166. 3. Dyderski M. K., Paź S., Frelich L. E., Jagodziński A. M. 2018. How much does climate change threaten European forest tree species distributions? *Global change biology*, *24*(3): 1150-1163. https://doi.org/10.1111/gcb.13925 4. Aitken S.N., Yeaman S., Holliday J.A., Wang T. and Curtis-McLane S. 2008. Adaptation, migration or extirpation: climate change outcomes for tree populations. Evolutionary Applications 1(1): 95–111. 5. Zasady Hodowli Lasu. Załącz. nr 1 do Zarządzenia DGLP nr 108 z dnia 05.12.2023 r.
Supplementary references	1. Morison James I.L. Climate change and forests. How do woodlands and forests affect the climate? Forest Research. Climate change factsheet series. www.forestresearch.gov.uk/research 2. Program adaptacji lasów i leśnictwa do zmian klimatycznych do roku 2020 (projekt). Lasy Państwowe. 3. Mauri A., de Rigo D., Caudullo G. 2016. *Abies alba* in Europe: distribution, habitat, usage and threats. European Atlas of Forest Tree Species. Publisher: Publication Office of the European Union. 4. Nowa kategoria lasów – lasy społeczne! https://agronomist.pl/artykuly/nowa-kategoria-lasow-lasy-spoleczne
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