

Course title:	Invasions in the Forest - Invaders from the Worlds of Plants, Animals, and Fungi
Course title in Polish:	Inwazje w lasach - najeźdźcy ze świata roślin, zwierząt i grzybów
Course for discipline:	Forest Sciences

Semester:	3	Status of course:	faculty	Language:	english
Academic year:	2026/27	Catalog number:	178/2025/26		

Coordinator of course:	Katarzyna Marciszewska	
Lecturer od course:	dr hab. Dagny Krauze-Gryz prof. SGGW, dr inż. Katarzyna Marciszewska, dr hab. Tomasz Mokrzycki, dr hab. Patryk Rowiński prof. SGGW, dr hab. inż. Andrzej Szczepkowski, prof. SGGW	
Executing unit:	Institute of Forest Sciences	
Ordering unit:	Doctoral School SGGW	
Assumptions, goals and description of the course:	The aim of the course is to familiarize the doctoral student with issues related to the presence and functioning of alien species in forest ecosystems. The aim of the subject is to demonstrate the consequences of the introduction of geographically alien species of plants, animals, and fungi, and their ecological impacts on nature conservation and the economy, especially in the forest environment. The aim is to draw attention to the intensification of the introduction of invasive alien species in the second half of the 20th century, the role of humans in eliminating geographical and ecological barriers separating species, the global nature of invasions, and the threats they pose to biodiversity. The classes will cover the following topics: 1) introduction, terminology and definitions (native species, alien species, invasive species, introduction - introduction and introduction, introduction and invasion - the so-called tens rule, Williamson and Fitter 1996), invasion and invasiveness, expansion and expansiveness, susceptibility to invasion, invasion mechanisms), 2) origin, impact and characteristics of invasive species: plants, vertebrates, insects and fungi, 3) scale and types of threats posed by invasions to forest biodiversity and their effects for forest management.	
Didactic form, number of hours:	15 hours, including 4 hrs. in the field (part concerning alien plants)	
Teaching methods:	Problem lecture, discussion, field case study	
Limit of people in the group:	16	
Learning outcomes		
KNOWLEDGE - the graduate knows and understands:	SKILLS - the graduate is able to:	COMPETENCES - the graduate is ready to:
To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Critically evaluate the achievements in the field/discipline represented
Major general development trends in the field/discipline	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect
To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	Support the ethos of scientific circles and conduct independent research
The method of verification of learning outcomes:	Written examination	
Form of documentation of achieved learning outcomes:	Name list of attendance and activity during classes with final grades	
Elements and weights of the final grade:	Preparation for classes and activity during classes (20%), the grade for the written examination (80%)	
Place of the course:	lecture hall, WULS-SGGW Park in Ursynów, nature reserve Skarpa Ursynowska	
Basic and supplementary literature		

BASIC LECTURE

Desprez-Loustau M-L. 2009. Alien fungi of Europe. W: DAISIE Handbook of alien species in Europe. Springer.

Desprez-Loustau M-L., Robin C., Buée M., Courtecuisse R., Garbaye J., Suffert F., Sache I., Rizzo D.M. 2007. The fungal dimension of biological invasions. *Trends in Ecology and Evolution* 22 (9): 472-480.

Głowaciński Z., Okarma H., Pawłowski J., Solarz W. (red). 2011. Gatunki obce w faunie Polski. Instytut Ochrony Przyrody PAN, Kraków 2011. Kirkendall LR, Faccoli M (2010) Bark beetles and pinhole borers (Curculionidae, Scolytinae, Platypodinae) alien to Europe. In: Cognato AI, Křížek M (Eds) Sixty years of discovering scolytine and platypodine diversity: A tribute to Stephen L. Wood. *ZooKeys* 56 : 227 – 251 . doi: 10.3897/zookeys.56.529

Lista inwazyjnych gatunków obcych zwierząt, Generalna Dyrekcja Ochrony Środowiska (gdos.gov.pl) <http://projekty.gdos.gov.pl/igo-lista-inwazyjnych-gatunkow-obcych-zwierzat>.

Richardson D. M., Pyšek P., Rejmánek M., Barbour M.G., Panetta D., West C.J. 2001. Naturalization and invasion of alien plants: concepts and definitions. *Diversity and Distribution*. <https://doi.org/10.1046/j.1472-4642.2000.00083>.

Tokarska-Guzik B, Dajdok Z., Zajac M., Zajac A., Urbisz A., Danielewicz W., Hołdyński Cz. 2012. Rośliny obcego pochodzenia w Polsce ze szczególnym uwzględnieniem gatunków inwazyjnych. GDOŚ http://www.gdos.gov.pl/files/artykuly/5050/Rosliny_obcego_pochodzenia_w_PL_poprawione.pdf.

Wojewoda W., Karasiński D. 2010. Invasive macrofungi Ascomycota and Basidiomycota in Poland. W: Mirek Z. (red.). *Biological Invasions in Poland 1*. W. Szafer Institute of Botany, Polish Academy of Sciences: 7-21.

SUPPLEMENTARY LECTURE.

Jasińska K. 2020. Gatunki obce zwierząt w lasach polskich. Biblioteczka Leśniczego nr 402. Wydawnictwo Świat, Warszawa.

Krauze D., Gryz J. 2012. Wiewiórka szara (*Sciurus carolinensis*) w Polsce: science fiction czy realne zagrożenie? *Studia i Materiały CEPL* 33: 327-334. Marciszewska K., Szczepkowski A., Otręba A., Oktaba L., Kondras M., Zaniewski P., Ciurzycki W., Wojtan R. 2018. The dynamics of sprouts generation and colonization by macrofungi of black cherry *Prunus serotina* Ehrh. eliminated mechanically in the Kampinos National Park. *Folia Forest. Pol. Ser. A* Vol. 60 (1), 34–51. DOI:10.2478/ffp-2018-0004.

Marciszewska K., Szczepkowski A., Otręba A. 2020. Black cherry (*Prunus serotina* Ehrh.) colonization by macrofungi in the fourth season of its decline due to different control measures in the Kampinos National Park. *Folia Forestalia Polonica, Series A – Forestry*, 2020, Vol. 62 (2), 78–87. DOI: 10.2478/ffp-2020-0009.

Mokrzycki T. 2016. Obce gatunki korników (Coleoptera, Curculionidae, Scolytinae) w faunie Polski i potencjalne zagrożenia dla drzewostanów. *Studia i Materiały CEPL w Rogowie* 18,46(1): 105-111.

Szczepkowski A., Obidziński A. 2012. Obce gatunki sromotnikowatych Phallaceae w lasach Polski. *Studia i Materiały CEPL*, 14, 33 (4); 279-295. http://cepl.sggw.pl/sim/pdf/sim33_pdf/sim33_Szczepkowski_Obidzinski.pdf.

Comments:**Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:**

Learning outcomes reference to the second degree characteristics of the National Qualification Framework (level 8) covering doctoral competences:		
Symbol:	Learning outcomes:	8 level NQF
SD1_KW01	To the extent enabling to revise the existing paradigms in the field/discipline - the world achievements, gathering theoretical background as well as general and selected detailed issues	P8S_WG
SD1_KW02	Major general development trends in the field/discipline	P8S_WG
SD1_KU05	Carry out critical assessment of the scientific research findings and expert activities and their contribution to the knowledge development in the field/discipline	P8S_UW
SD1_KK01	Critically evaluate the achievements in the field/discipline represented	P8S_KK
SD1_KK03	Recognise knowledge in solving cognitive and practical problems characteristic for the area of research (field/discipline) and in an interdisciplinary aspect	P8S_KK
SD1_KK08	Support the ethos of scientific circles and conduct independent research	P8S_KR