Course title:	Spatial statistics
Course title in Polish:	Statystyka przestrzenna
Course for discipline:	agriculture and horticulture

Semester:	5	Status of course:		Language:	English
Academic year:		Catalog number:			

Coordinator of course:	dr hab. Marcin Studnicki, prof. SGGW
Lecturer od course:	dr hab. Dariusz Gozdowski, prof. SGGW; dr hab. Marcin Studnicki, prof. SGGW
Executing unit:	Department of Biometry, Institue of Agriculture
Ordering unit:	Doctoral School SGGW
Assumptions, goals and description of the course:	This course is designed to provide an introduction to fundamental conceptual, computational, and practical methods of spatial data analysis. Topics include: defining geostatistical, areal and point processes, visualizing spatial data, variogram, interpolation, kriging, spatial autoregressive models. During the classes, topics will be discussed using R and QGIS software.
Didactic form, number of hours:	Lecture, 10 h
Teaching methods:	Case study
Limit of people in the group:	30

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 pradigms in the field/discipline - the world achievments, 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 achievments in the field/discipline represented
Major general development trends 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
		Support the ethos of scientific circles and conduct independent research

The method of verification of learning outcomes:	Project
Form of documentation of achieved learning outcomes:	Word and Excel file with results of project
Elements and weights of the final grade:	100% project
Place of the course:	Lecture hall of Department of Biometry

Basic and supplementary literature
Banerjee, S., Carlin, B.P. and Gelfand. A.E (2014) Hierarchical Modeling and Analysis for Spatial Data, CRC Press, New York Gaetan, C. and Guyon, X. (2010) Spatial Statistics and Modeling, Springer, New York. Gelfand, A.E., Diggle, P., Guttorp, P. and Fuentes, M. (2010) Handbook of Spatial Statistics, CRC Press, New York
Comments:

Estimated number of hours of work of the doctoral student necessary to achieve the assumed learning outcomes:	15

Leraning 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 pradigms in the field/discipline - the world achievments, 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 achievments 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