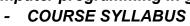
## Computer programming in geoscience applications





1.	Course title:	
	Computer programming in geoscience applications	
2.	Lecturer:	
	Mariusz Majdański	
3.	Field, type and level of studies, year of study:	
	Everyone with geophysical focus, first or second year of study	
4.	Course character:	
	Monographic lecture (with programming classes)	
5.	Teaching method:	
	Traditional on-site (or hybrid if needed)	
6.	Language:	English
7.	Course type and number of hours:	
	Lecture 10h, classes 20h	
8.	Estimated load of student's independent work:	20h
9.	Total workload and number of ECTS points:	50 h, 2 ECTS
10.	Short description and main focus of the course:	

## 11. References: Machtelt Garrels, Introduction to Linux, A Hands on Guide 2. Internet materials: www.python.org, www.numpy.org, www.scipy.org, matplotlib.org 12. **Prerequisites:** basic MSc level course of physics and mathematics 13. PQF level 8 codes: **Educational outcomes: Knowledge:** Student understand: P8S\_WG how to solve simple inversion problems how to optimise inversion using iterative and statistical methods **Practical Skills:** student know and understand: P8S\_UW Basic syntax of Python language including data processing and visualization Knows how to write new and use pre-existing modules with advanced routines and algorithms Social Skills: student is ready to: P8S\_KK Recognize the challenges in solving practical problems related to big data sets Understand importance of the uncertainty analysis in computer sciences and explain those concept to the public 14. **Evaluation of the educational outcomes:** Two tests writing codes + oral exam 15. Criteria to complete the course: Two programming tests with three tasks will be organized (max 15 points each). More than half points from both tests to pass (grade 3). For highest grade (5) 90% of points and positive oral exam. 16. Contact with the lecturer:

Email: mmajd@igf.edu.pl or personal contact in 512A (IG PAS)