An interdisciplinary summer school on mining of biological data for master and PhD students
August 2019, Minsk, Belarus

	Saturday 10.	Sunday 11.	Monday 12.	Tuesday 13.	Wednesday 14.	Thursday 15.	Friday 16.	Saturday 17.
Time			Course	Course	Course	Course	Course	Mini-workshop
8:15-8:30			Introduction					
8:30-9:15	Arrival and check in at the hotel, dinner	Social program whole day: Tour to the Castles of Mir and Nesvizh. Lunch will be served	***Orange Introduction*** (Dr. Marko Toplak University of Ljubljana and SMIS Beam-line Synchrotron Soleil)	Invited lecture: Yatskov Mikalai, Luxembourg Institute of Health, Department of Oncology ***Single Cell transcriptomics***	***Orange Introduction*** (Dr. Marko Toplak)	Invited lecture: Dr. Ferenc Borondics, SMIS Beam-line Synchrotron Soleil, Paris, France ***Big facilities, big data***	Invited lecture: Prof. Dr. Tamaz Mdzinarashvili, Faculty of Exact and Natural Sciences, GE- Ivane Javakhishvili Tbilisi State University (GE) ***Biological thermodynamics***	Invited lecture: Dr. Ferenc Borondics, SMIS Beam-line Synchrotron Soleil, Paris, France ***Challenges in data analysis of infrared spectra from biological and biomedical samples***
09:15-10:00			Module 3: Spectroscopic methods (Olga)	Module 4: Analytical methods used in biology (Olga)	Module 5: Biomedical Imaging (Vassili)	*Group work (Experts in a Team)*	*Group work (Experts in a Team)*	Workshop with research presentations by PhD students
10:00-10:15								
10:15-10:45			Module 6: Basic Statistics (Victor)	Module 9: Machine learning (Roman)	Module 8: Clustering (Mikalai)	Group work (*Experts in a Team*)	Group work (*Experts in a Team*)	Workshop with research presentations by PhD students
10:45-12:00			Tutorial: Basic statistics (Victor)	Tutorial: Machine learning (Roman)	Tutorial: Clustering (Mikalai)			
12-13								
13:00-13:30			Module 7: PCA (Achim)	Module 10: Deep learning (Vassili) Room: U227	Tutorial for modules 6-12, further Data Analysis and Orange Rooms: U223 and U226 Topics for group work will be distributed together with the data	Group work (*Experts in a Team*)	Group work presentations	Workshop with research presentations by PhD students
13:30-14:45			Tutorial: PCA (Achim)	Tutorial: Deep learning (Vassili)				
14:45-15:00			Break					
15:00-15:30			Module 12: Data pre-treatment (Achim)	Module 11: Data analysis of genetic data (Vasily)				
15:30-16:45			Tutorial: Data pre-treatment (Achim)	Tutorial: Data analysis of genetic data (Vasily)				
Evening			Volley ball/soccer and barbecue	Claustrophobia Escape rooms	Alivaria beer museum	Free	Free	Summer School Gala Dinner

All lecture rooms are in the faculty of International Relations.