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|  | 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) |  | ***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) | Tutorial for modules 6-12, further Data Analysis and Orange  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 |

**August 2019, Minsk, Belarus**

All lectures will be held at the faculty of International Relations in room 1201.