ITMO University

Programming in Python (for beginners)

Course Workload		Assessment form (examination/ graded test/ ungraded test)
ECTS	Hours	
3	108	Exam

The course is aimed at learning basics of programming in Python language. At the same time, during the course students apply gained knowledge to solve simple bioinformatics problems.

Course structure:

1. Python Basics. Control Flow.

1.1. Numbers (int, float)
1.2. Strings
1.3. Boolean Type
1.4. Variables and rules for naming variables
1.5. Arithmetic Operators
1.6. Comparison Operators
1.7. Logical Operators
1.8. input(), print()
1.9. Indentation
1.10. if statement
1.11. break, continue statements
1.12. while and for loops

2. Data Structures. Functions. Functional Programming

2.1. List (list methods, list comprehension)
2.2. Set (set methods, operations with elements)
2.3. Dictionary (dictionary methods, dictionary vs list)
2.4. Tuple
2.5. Function name, return statement
2.6. None type, is operator
2.7. Function arguments, Recursion
2.8. lambda functions
2.9. Briefly about iterators
2.10. map(), filter(), reduce(), zip() functions

3. Call stack. Namespace. Modules. Files. Python Classes.

3.1. Stack Data Structure
