

ITDC-CPP, Structural Programming, Object-oriented Programming, Data Structures and Algorithms

American University of Central Asia
Software Engineering Program

1 Course Information

Course ID

ITDC-CPP

Course Repository

<https://github.com/auca/itdc-cpp>

Class Discussions

<https://piazza.com/auca.kg/summer2018/itdcdroid101/home>

Place

AUCA, laboratory G30

Time

Lecture/Lab: Monday 10:00

Lecture/Lab: Tuesday 10:00

Lecture/Lab: Wednesday 10:00

Lecture/Lab: Friday 10:00

2 Contact Information

Instructor

Toksaitov Dmitrii Alexandrovich

toksaitov_d@auca.kg

Office

AUCA, room 315

AUCA, Media Laboratory

3 Course Overview

This course helps to equip students with basic skills needed for structural and object-oriented programming. At the completion of the course students should understand fundamental programming concepts such as flow control, objects, classes, methods, procedural decomposition, inheritance and polymorphism; be able to write simple applications using most of the capabilities of the C++ programming language and apply principles of good programming practices throughout the process.

4 Topics Covered

- Elementary Programming
- Selections
- Loops
- Methods
- Arrays
- Objects and Classes
- Inheritance and Polymorphism
- Abstract Classes and Interfaces
- Exception Handling
- Templates
- List, Stack and Queue
- Map and Set
- Graphs
- Sorting and Searching
- GUI and Computer Graphics Basics
- Working with I/O

5 Exams

5.1 Lectures

Students will have to take midterm and final examinations on topics discussed during lectures. Each examination is in the form of a quiz with a set of open and multiple choice questions.

5.2 Labs

Students will have around 14 laboratory tasks, get a number of problems from various Online Judge Systems, and have to finish two projects developing real-world applications. Students will have to defend their work to the instructor during separate midterm and final examination sessions.

6 Reading

Introduction to Programming with C++, 3rd Edition by Daniel Liang

7 Rules

Students are required to follow the rules of conduct of the Software Engineering Department and American University of Central Asia.