HEADED Document | Faculty of Computing, University of Latvia

December DAY, 2021

Name Surname (from **School, City, Country**) participated in the course DatZ7097 "Programming quantum computers" from our doctoral study program in Autumn 2021, which was delivered between September 2021 and December 2021. It is a 4 credits course (64 academic hours and 96 individual study hours), equivalent to 6 credits of European Credit Transfer and Accumulation System Credits. The course was taught by our faculty member Assoc. Prof. Abuzer Yakaryilmaz. The current syllabus of the course can be accessed at the following link: https://luis.lu.lv/pls/pub/kursi.kurss_dati?p_kods=2DAT7097&l=2&p_par=

During the course, the hands-on tutorials called Bronze and Silver on "quantum computing and programming" developed by QWorld (https://qworld.net) was used as the main materials, and the following topics were covered: **basics of probabilistic and quantum systems; elements of basic quantum circuits and quantum programming libraries such as Qiskit and Cirq; superposition and measurement; composite quantum system; Grover's search algorithm and its implementation; complex numbers and Bloch Sphere; Quantum Fourier Transform and its implementations; and, Shor's factorization algorithm and its implementation. Besides, each student was asked to complete a term project.**

The course grade was calculated based on **N** homework (70 points in total) and one term project (30 points). **Name Surname worked on a project entitled "PRQ"** and completed the course with **XY** points out of 100 points.

Prof. Dr. Andris Ambainis
Director of the doctoral study programme