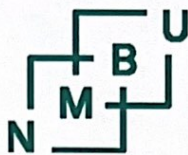




Direktoratet for  
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Norwegian University  
of Life Sciences

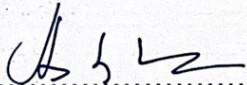
# Certificate of Completion

is awarded to

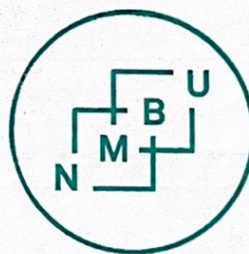
**Dr. Alina Ovcharenko**

Dnipro University of Technology

for participation in the **Staff Professional Development Training Program**  
“**Innovative Pedagogy in Water Educational Programs of the Higher School**” of  
Water Harmony Project, co-funded by the Norwegian Agency for International  
Cooperation and Quality Enhancement in Higher Education, 2020-2022.  
(list of trainings enclosed)

  
.....

Harsha Ratnaweera, PhD  
Project Manager – Water Harmony - II  
Professor in Water & Wastewater Treatment  
Faculty of Sciences and Technology  
Norwegian University of Life Sciences  
P O Box 5003, 1432 Ås,  
Norway



**Water Harmony**  
Eurasia-II

14<sup>th</sup> June 2022

No 0044



**Staff Professional Development Training Program**  
**2020-2022**  
**40 hours**

№	Lectures and Training Sessions	Dates	Hours
1	<p>Lecture. Digitalization of higher education:</p> <ul style="list-style-type: none"> <li>- Introduction and structure of the professional development program</li> <li>- Status and trends in the digital transformation of the education sector</li> <li>- Online learning management systems (LMS)</li> <li>- Online active learning tools</li> </ul> <p>Prof. H. Ratnaweera, Dr. Z. Maletsky, Norwegian University of Life Sciences (Ås, Norway)</p>	21-05-2020	3.0
2	<p>Lecture. Modern methods of active learning:</p> <ul style="list-style-type: none"> <li>- Active Learning Methods: Overview and Trends</li> <li>- Cooperative learning (I-You-We techniques)</li> <li>- Minute Paper Technique</li> <li>- Mutual learning (Peer Learning, Stump Your Partner, Catchup techniques)</li> <li>- Problem based learning</li> </ul> <p>Prof. H. Ratnaweera, Dr. Z. Maletsky, Norwegian University of Life Sciences (Ås, Norway)</p>	08-06-2020	3.0
3	<p>Lecture. Modern analytical methods for the study of water and materials:</p> <ul style="list-style-type: none"> <li>- Review of analytical methods: spectroscopy, mass spectrometry, chromatography</li> </ul> <p>Dr. Z. Maletsky, Norwegian University of Life Sciences (Ås, Norway)</p> <p>Virus analysis and research, including SARS</p> <p>Prof. V. Tarabara, Michigan State University (Lensing, USA)</p> <p>Raman spectroscopy and fluorescence</p> <p>Prof. I. Chernyshova, Columbia University (New York, USA)</p> <p>IR spectroscopy and scanning electron microscopy</p> <p>Prof. G. Korshin, University of Washington (Seattle, USA)</p>	08-07-2020	4.0
4	<p>Lecture. Online water quality measurements in the treatment process:</p> <ul style="list-style-type: none"> <li>- The need for online monitoring</li> <li>- Water sampling: methods, possible errors, equipment</li> <li>- Real-time physical sensors: UV-visible absorption; Ion selective electrodes</li> <li>- Auto-analyzers: Flow injection analysis/sequential injection analysis; Microanalyzers, lab-on-a-chip analyzer</li> <li>- Virtual sensors (soft sensors, proxy settings)</li> <li>- Practical tasks and potential</li> <li>- Trends and technological developments</li> </ul> <p>Prof. H. Ratnaweera, Dr. Z. Maletsky, Norwegian University of Life Sciences (Ås, Norway), Prof. S. Kalinowski, Warmia-Mazury University (Olsztyn, Poland)</p>	30-10-2020	3.0
5	<p>Lecture. Preparation of scientific publications:</p> <ul style="list-style-type: none"> <li>- When to publish</li> <li>- Where to publish (open access, peer-reviewed journals, predatory journals)</li> <li>- Publishing process</li> <li>- How to organize your manuscript</li> <li>- Common mistakes leading to failure</li> <li>- How to work with links (mendeley.com)</li> <li>- How to present your publications and increase your scientific statistics: ORCID, Scopus, Researchgate, Google Scholar</li> </ul> <p>Prof. H. Ratnaweera, Dr. Z. Maletsky, Norwegian University of Life Sciences (Ås,</p>	13-11-2020	3.0



6	Norway), Dr. N. Sivchenko, DOSCON (Oslo, Norway) Lecture. Building Information Modelling and Digital Twins: - Building Information Modelling (BIM) - Digital twins Prof. H. Ratnaweera, Norwegian University of Life Sciences (Ås, Norway), BIM Ing. O. Shelestina, Norsk Wavin (Oslo, Norway)	04-12-2020	2.5
7	Lecture. Circular Economy: - Linear economy and sustainable development - Circular economy in the water sector - Technologies for the reuse of water, energy and other valuable resources Dr. Z. Maletsky, Norwegian University of Life Sciences (Ås, Norway)	09-06-2021	1.0
8	Lecture. Physical and cyber risks in the water sector Prof. H. Ratnaweera, Norwegian University of Life Sciences (Ås, Norway)	13-06-2022	1.5
9	Review lectures materials and tutorial of lab works	2020-2022	19.0

Total hours: **40**