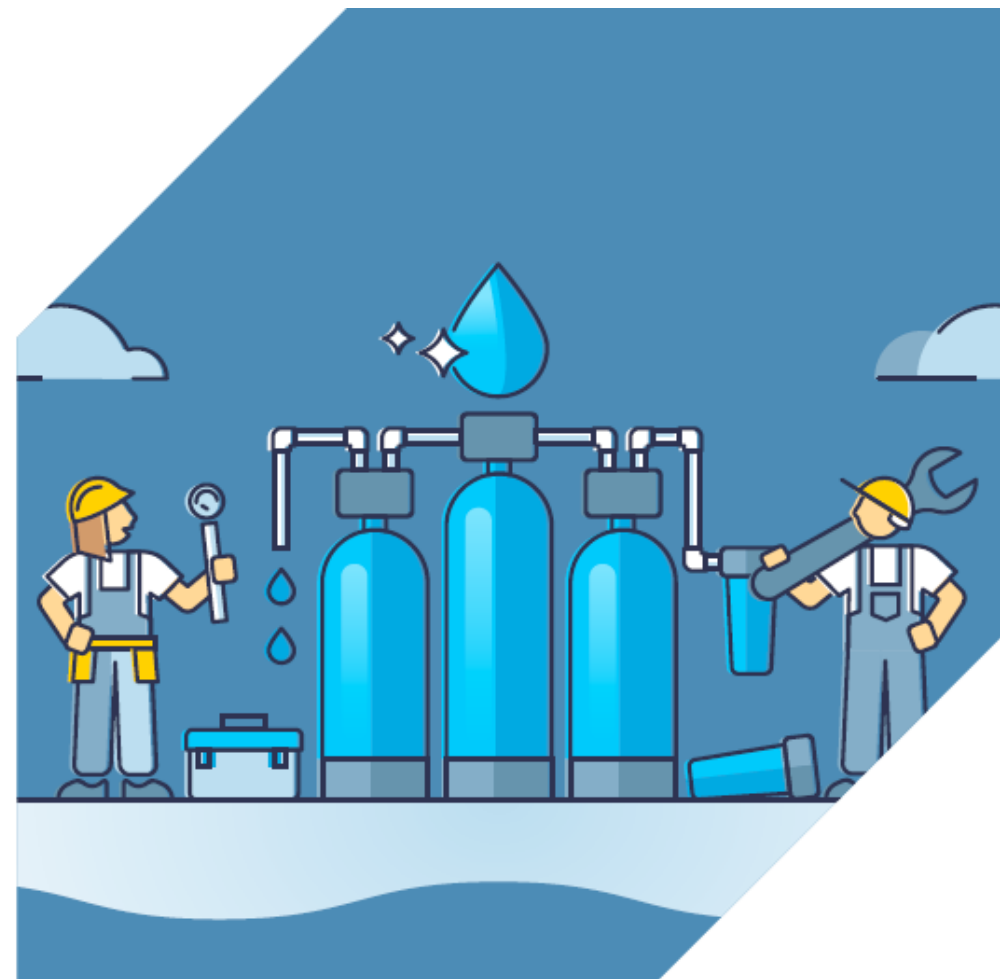




RIGA TECHNICAL  
UNIVERSITY

SUMMER  
SCHOOL

**WASTE MANAGEMENT.  
CLEARWATER  
TECHNOLOGIES**



July 25–August 5 | Riga | 2022

The background features a repeating pattern of light gray speech bubbles with a dark teal question mark inside, set against a dark teal background. The text is centered in white.

Jak jsme se dozvěděli o letní škole?

## Aktuality pro studenty

21. DUBEN 2022	<a href="#">Erasmus+ výběrové řízení: krátkodobé doktorandské mobility</a>	>
15. ÚNOR 2022	<a href="#">Forster Summer School (JGU Mainz)</a>	>
8. ÚNOR 2022	<a href="#">Elektronické zdroje</a>	>

Short-term studies

# Summer/Winter Schools



Urban, Indoor  
Gardening & Design



Waste Management,  
Clearwater Technologies



Fracture Structures:  
Material Stress Resistance



Introduction in Deep  
Learning for Cybersecurity

Short-term studies

# Summer/Winter Schools



IoT Solutions for  
Green Ecosystems and  
Sustainable Living



3 Pillars of Sustainability



Future transitions for  
the Bioeconomy towards  
Climate Neutrality



Design Engineering for  
Creative Industries

Short-term studies

# Summer/Winter Schools



Global Leadership



Emotional Intelligence.  
Update your IQ with EQ



Time Capsule of Latvian  
Footprints and 160 years of  
Engineering Traditions



Intensive English



# Možnosti financování letních škol



## STUDIUM A STÁŽE V ZAHRANIČÍ

### Erasmus+

Nejznámější příležitost, jak strávit část studia v zahraničí a rozšířit si tak své obzory.

### Freemovers

Pokud máte specifickou představu o tom, kam do zahraničí vycestovat, zkuste to jako freemover.



Summer-Winter Schools

# Waste Management. Clearwater Technologies



## Availability

25 July-5 August 2022



## Entry requirements

Participants must be enrolled in a degree related to natural science, engineering, environmental science, biology, etc.



## Tuition Fee

EUR 700



## Learning Outcomes

RTU certificate, 6 ECTS



## Accommodation

Included upon request only/shared rooms

Summer-Winter Schools

# Waste Management. Clearwater Technologies



## Availability

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## Entry requirements

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## Tuition Fee

EUR 700



## Learning Outcomes

RTU certificate, 6 ECTS



## Accommodation

Included upon request only/shared rooms

## Checklist

### Application fee

I have NOT yet paid the application fee



follow-up required

“ I would like to apply for a Latvian scholarship granted by VIAA as an eligible candidate. ”

A close-up photograph of a white ceramic bowl with a dark brown handle, filled with a vibrant pink soup. The soup is garnished with a sliced hard-boiled egg and several thin slices of green onions. The bowl sits on a dark saucer with the word 'skanaus!' embossed on it. In the background, a wooden surface and a piece of fabric with the word 'LIEF' are visible.

A teď něco k Lotyšsku...



# Lotyšsko

- Jedna ze 3 pobaltských zemí
- 2 mil. obyvatel
- 64 589 km<sup>2</sup>

A close-up photograph of a red pushpin pinned to a map. The map shows various colored lines representing roads and geographical features. The text 'Zajímavá místa' is overlaid in white on a semi-transparent dark background.

# Zajímavá místa

# Riga

- Hlavní město
- 632 tisíc obyvatel



# Architektura v Rize

- Největší koncentrace secesních budov
- 1/3 budov
- 1904-1914

# Voda v Rize

- Daugava
- Kanály
- Baltské moře





# Hrady a zámky...



Lesy





Moře



Zima






Největší vodopád v Evropě!

A wide waterfall flows across a river. Several people are swimming in the water below the falls. One person is captured mid-air, jumping over the waterfall. A group of people stands on the top edge of the waterfall, watching. The background is a dense forest of green trees.

(na šířku)

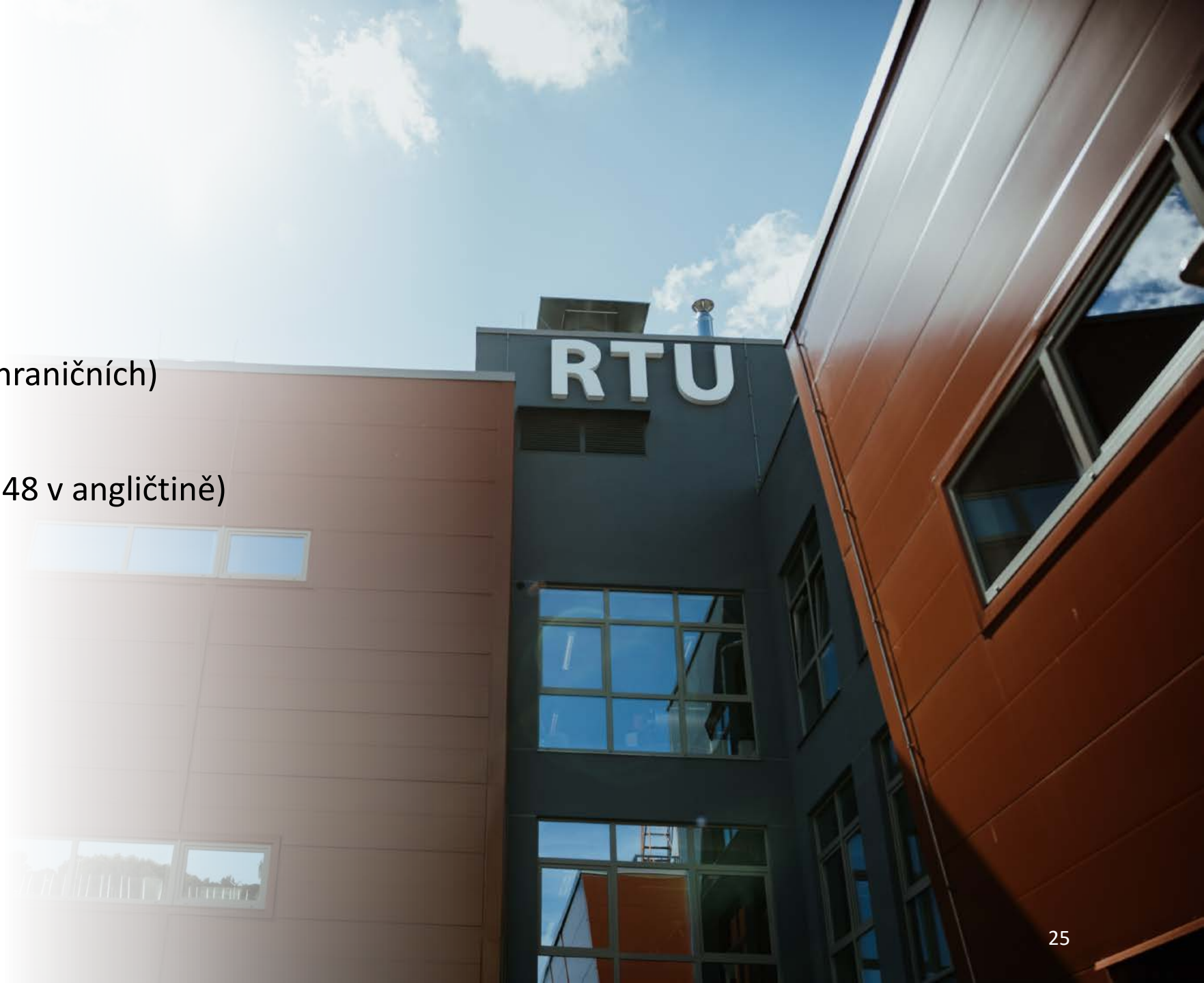


A teď zpátky k letní škole...



# RTU

- 15 000 studentů (12 % zahraničních)
- 600 Ph.D. studentů
- 140 studijních programů (48 v angličtině)

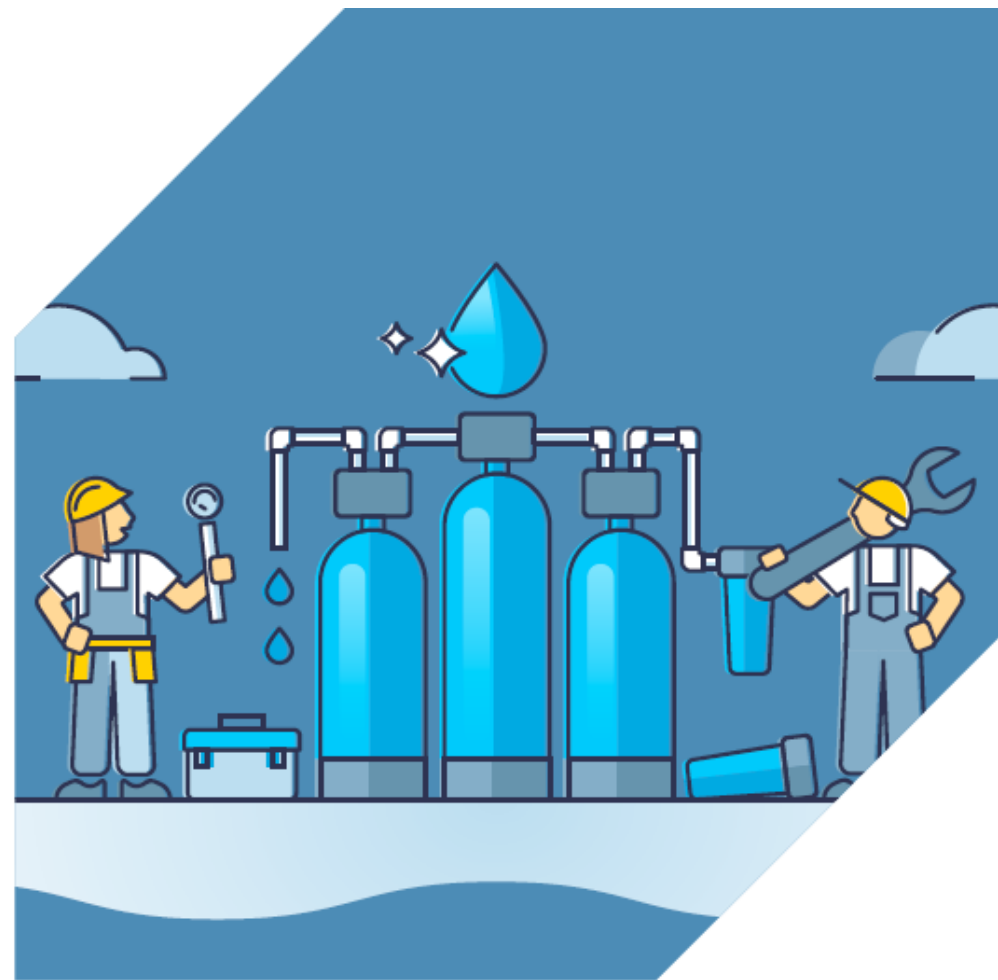




RIGA TECHNICAL  
UNIVERSITY

SUMMER  
SCHOOL

# WASTE MANAGEMENT. CLEARWATER TECHNOLOGIES



July 25–August 5 | Riga | 2022

# Program letní školy

## August 2 **TUESDAY**

10:00–12:00	<b>Introduction to lab analysis methods by Linda Mezule</b>	6A Kipsala street
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
15:30–18:00	<b>Work on projects with mentor</b>	6A Kipsala street

## August 3 **WEDNESDAY**

10:00–12:00	<b>Work on projects with mentor</b>	6A Kipsala street
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
13:00–17:00	<b>Work on projects with mentor</b>	6A Kipsala street

## August 4 **THURSDAY**

10:00–12:00	<b>Work on projects with mentor</b>	6A Kipsala street
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
13:00–17:00	<b>Work on projects with mentor</b>	6A Kipsala street

## August 5 **FRIDAY**

10:00–12:00	<b>Work on projects with mentor</b>	6A Kipsala street
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
13:00–17:00	<b>Final Presentations</b>	

## July 25 **MONDAY**

10:00–10:30	<b>Introduction into Summer School</b>	Room 120, 12 Azenes street
10:30–12:00	<b>Milestones of Latvian Culture and Language</b>	
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
13:00–16:00	<b>Riga Sight-seeing tour</b> *Meeting at 13:00 PM in the RTU Student Hostel (reception)	

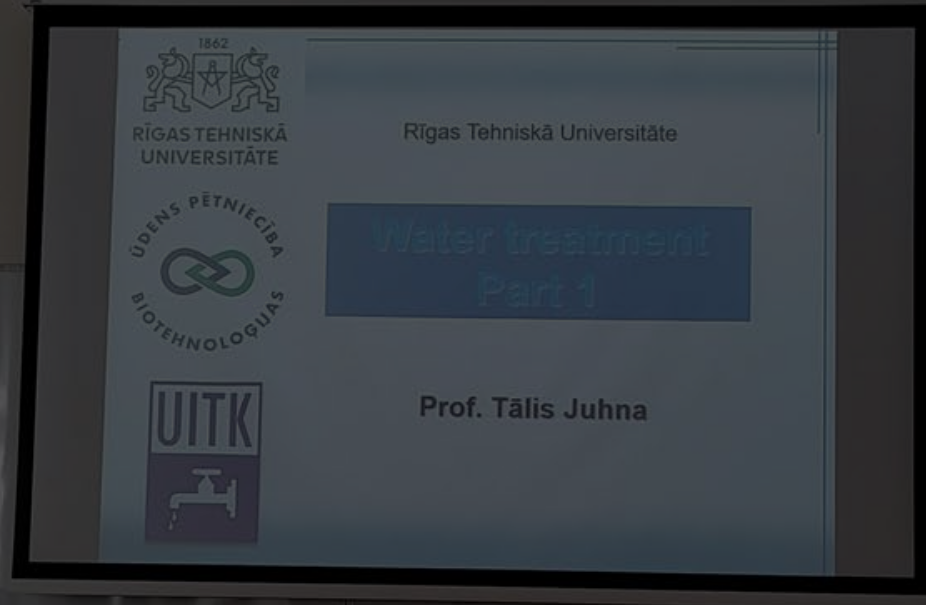
## July 26 **TUESDAY**

10:00–12:00	<b>Drinking water treatment by Talis Juhna</b>	Room 120, 12 Azenes street
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
13:00–21:00	<b>Field trip to drinking water station “Baltezers” and water sport evening</b> *Meeting at 13:00 PM near 12 Azenes street	

## July 27 **WEDNESDAY**

10:00–12:00	<b>Water distribution and management by Sandis Dejus</b>	Room 120, 12 Azenes street
12:00–13:00	LUNCH	RTU CAFE, 12 Azenes street
13:00–20:00	<b>Field trip to Jelgava – “Evopipes” and Jelgava water</b> *Meeting at 13:00 PM near 12 Azenes street	

# Přednášky



# Exkurze



# Exkurze



# Exkurze



# Exkurze





# Exkurze



# Exkurze



# Exkurze



# Exkurze



# Exkurze





# Laboratorní projekt

# Application of *Chlorella vulgaris* for municipal wastewater nutrient removal as a potential tertiary wastewater treatment technology in Baltics

*Dmytrenko D.<sup>1</sup>, Minich M.<sup>2</sup>, Terzi I.<sup>3</sup>, Vespalec J.<sup>2</sup>*

<sup>1</sup> *Institute of Economic Sciences, Faculty of Economics and Administration, University of Pardubice, Studencká 95, 532 10 Pardubice, Czech Republic*

<sup>2</sup> *Institute of Chemistry and Technology of Environmental Protection, Faculty of Chemistry, Brno University of Technology, Purkyňova 118, 612 00 Brno, Czech Republic*

<sup>3</sup> *Department of Electrical and Computer Engineering, University of Patras, Patras University Campus, 265 04 Rion, Greece*

## **Abstract**

Baltic Sea, especially Gulf of Riga, is one of the most problematic areas regarding to coastal water eutrophication. Major sources of macronutrients discharged to the sea are urban wastewaters together with agricultural run-off. Nevertheless, EU and national wastewater discharge limits are met on the wastewater treatment plants effluents, there is still an issue of uncontrolled storm and wastewater discharge during heavy raining. Effective but costly long-term solution is a combined urban sewer system reconstruction to a separate sewer in major Baltic cities. Alternatively, a tertiary nutrient removal could be installed into big wastewater treatment plants to increase their capacity and reduce the nutrient discharge. Microalgal municipal wastewater nutrient remediation appears to be one of the suitable technologies for such treatment. This study explores major advantages and disadvantages of the use of microalgae for nutrient removal in municipal wastewater treatment considering

# Děkujeme za pozornost

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