

WP4. Implementation of developed master curricula and trainings

Zakhar Maletskyi & Harsha Ratnaweera

progress meeting **10 September 2021**

follow up of the meetings: 23 June 2021, 17 January 2021, 15 September 2020



This project has been funded with support from the European Commission. This publication reflects the views only of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein

What have we promised in the proposal?

	WP4	Implementation of developed master curricula and trainings - Development			
NMBU	4.1	Implementation of developed master curricula	Master curricula implemented	14-11-2021	NMBU, WB partners
	4.2	Implementation of trainings for professionals in water sector	Participants trained - Three-day training per WB HEI and 30 participants per training	14-02-2021	NMBU, WB partners
	4.3	Self-evaluation of master curricula	Quality report on master curricula	14-09-2021	NMBU, WB partners, QAC
	4.4	Self-evaluation of trainings for professionals in water sector	Quality report on trainings	14-03-2021	NMBU, WB partners, QAC



REPORT ON MASTER CURRICULA



Final report



SELF-EVALUATION REPORT OF TRAINING

Item	Task	Responsible	Start	End	Status
1	Self-evaluation of master curricula	Zakhar Maletskyi	14-09-2021	14-09-2021	Completed
2	Self-evaluation of trainings for professionals in water sector	Harsha Ratnaweera	14-03-2021	14-03-2021	Completed

How to turn COVID-19 crisis into an opportunity for higher education
a brief guide for water education
October 2020

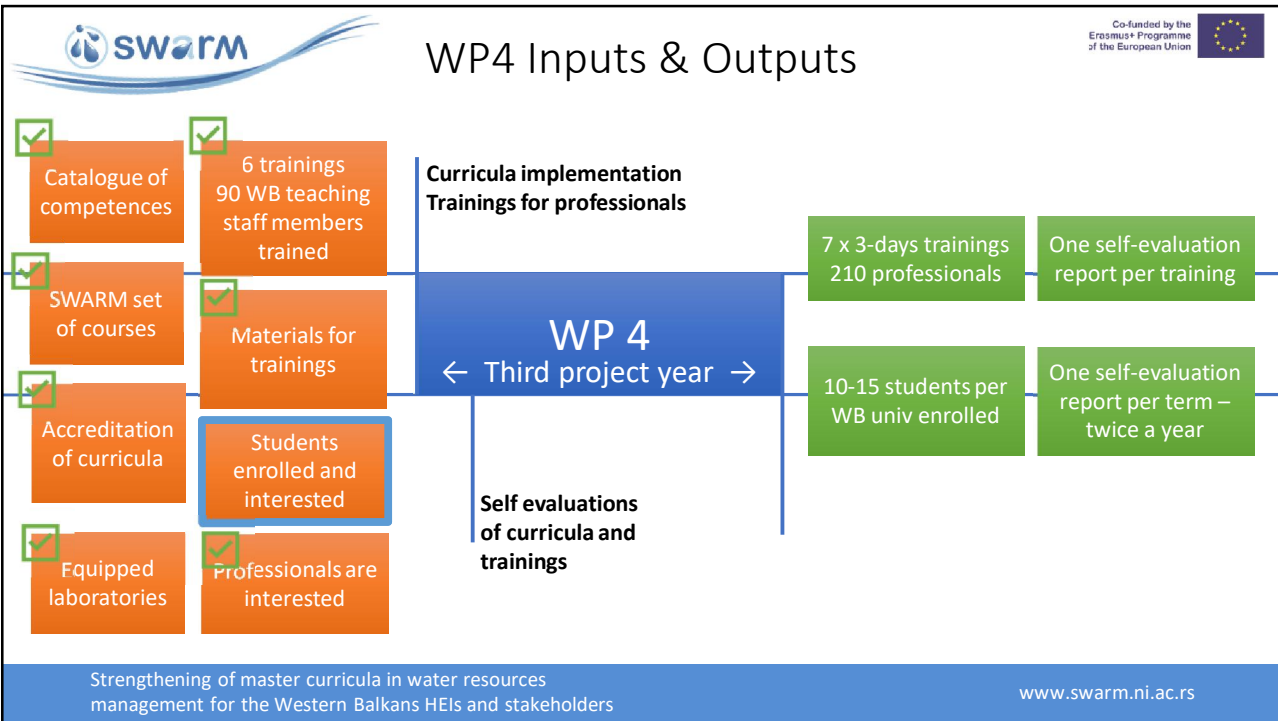
- Explore potential of Serious Games for water education
1. Avoid water crises suggested by NMBU project [SWARM](#)
 2. Recommendations for water education in water resources management and water quality
 3. [SWARM](#)
 4. Recommendations for water education in water resources management and water quality
 5. [SWARM](#)

- Try Augmented Collaboration tools
1. [SWARM](#)
 2. [SWARM](#)
 3. [SWARM](#)
 4. [SWARM](#)
 5. [SWARM](#)

Curricula Evaluation Practices

Contents

About	2
Overview of the curricula evaluation practices	3
Structure - Norwegian University of Life Sciences (NMBU)	4
Austria - University of Natural Resources and Life Sciences (BOKU)	9
Environmental education	11
Annex A - Evaluation table	12
Table 1 - Norwegian University of Life Sciences (NMBU)	13
Table 2 - Austria	14
Annex B - BOKU	15
Annex C - BOKU	16
Annex D - Evaluation table	17
Annex E - Evaluation table	18
Annex F - Evaluation table	19
Annex G - Evaluation table	20

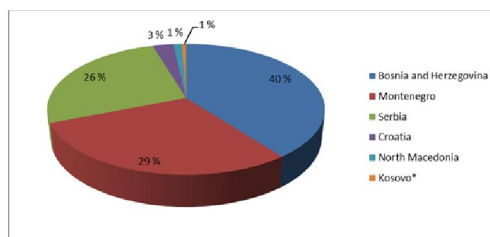
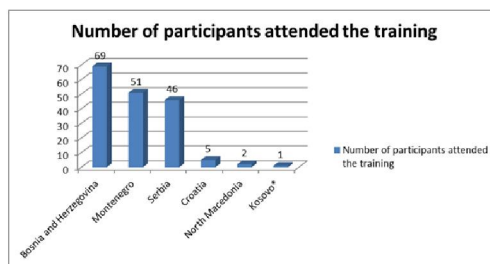


Trainings for professionals

Co-funded by the Erasmus+ Programme of the European Union

Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders

www.swarm.ni.ac.rs



- AASKM in Leposavic
- 38 participants
- The participants were from the local companies, STO, Fire department, Public Utility Company, Leposavic Municipality

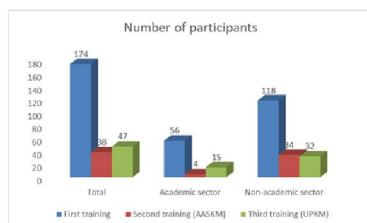
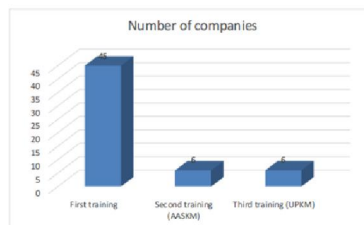
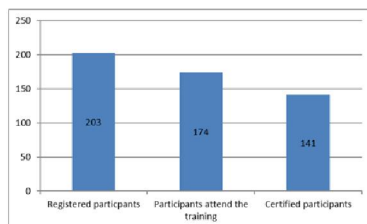


- Kosovska Mitrovica
- 32 participants
- The participants were from Municipalities, Departments for Environment, water and forestry, Local Water companies, Units for emergence situations, Trepca company, Public utility companies



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Curricula Implementation



How to turn COVID-19 crisis into an opportunity for higher education

a brief guide for water educators

Version 2 (07 September 2021)

Explore potential of Serious Games for water education

1. Check opportunities suggested by SMARTEN project <https://smartenproject.eu/>
2. Recommended serious game on water-food-energy nexus and related EU project <https://sim4nexus.eu/>
3. Recommended game on Adaptive Planning <https://delfttools.tueelft.nl/page/practice/>
4. More water games <https://games4sustainability.org/water-games/>

Try Augmented Collaboration tools

1. GroupMap <https://www.groupmap.com/>
2. Miro www.miro.com
3. Hovospace www.hovospace.com
4. Mentimeter <https://www.mentimeter.com/>
5. Slido www.sli.do
6. Kahoot <https://kahoot.com/>



1 Improve eLearning with Water Harmony eduwater.net

www.eduwater.net is the Water Harmony Community Hub, a platform for exchange of eLearning content and experience in water-related higher education. Currently it hosts 7 eLearning courses ready for import into learning management system of your university (Moodle, Canvas or any other):

- | | |
|---------------------------------------|---------------------------------------|
| 1. Water Resource Management | 5. Wastewater Treatment & Engineering |
| 2. Water Supply | 6. Industrial Water Management |
| 3. Academic writing and presentations | 7. Laboratory practicum |
| 4. Innovation & Entrepreneurship | |

1  Search courses and view content

2  Download course files

3  Import to your university eLearning platform

4  Use as e-course or in-class



University	Status		
	15 September 2020	Update 23 June 2021	Update 10 Sept 2021
UoNiš	15 students at BSc – June 2021 / 5-10 MSc end of 2020 / locked until accreditation / 50:50	Program accredited. Call for BSc is ongoing. Planned 10 BSc. Oct-Nov 10 MSc	Enrolled 19 students at BSc Oct: first generation of MSc (10 is the target)
UoNoviSad	4-5 MSc/year – enrolment in process by end of October 2020 / online, not clear how	3 MSc 2020-2021, 3 from the previous year	
UoSarajevo	15 MSc – enrolment by end of 2020 / 50:50	7 (I year), 17 (II year)	End of Sept: (1 st year) 6 students of MSc (2 nd year)
UoMostar	10 MSc – enrolment by October 2020 / ???	Enrolment started – planning 10 MSc	Enrolment in progress – by the end of Sept-mid Oct
UoPriština	Follow up email	10 BSc + 16 MSc (2020-2021)	14 BSc enrolled (inprogress=)
CollUrosevac	15 students, awaiting accreditation	10 Spec; in the process of accreditation	Sept-Oct
UoMontenegro	5 students	20 places, min 10 enrolled	20 MSc for 2021 by 10 th Oct



Winter / summer schools

Expected Deliverable/Results/Outcomes	Work Package and Outcome ref.nr	6.5.
	Title	Winter/summer schools organised
	Type	<input type="checkbox"/> Teaching material <input type="checkbox"/> Learning material <input type="checkbox"/> Training material <input type="checkbox"/> Service/Product <input checked="" type="checkbox"/> Event <input checked="" type="checkbox"/> Report

The students' short-time mobility from WB to EU partner HEIs is planned. Three winter (January 2021 – UL and AUTH, February 2021 – UNIRIFCE) and three summer schools (June 2021 – NMBU and BOKU, July 2021 – UACEG) in duration of 5 days will be organized with a participation of 13 WB students per school. The schools will be organized during the third project year.

Strengthening of master curricula in water resources management for the Western Balkans HEIs and stakeholders/SWARM

Page 222 of 170

	<p>Selected students from each WB HEI will visit EU partner HEIs, attend lectures/exercises, compare teaching/learning methodologies in the HEI of origin and acquired knowledge with the teaching/learning methodology in EU partner HEIs and knowledge and skills of students from EU. The teaching staff from EU partner HEIs will define topics in line with applying innovative techniques in water resources management. During the same period 17 teaching staff from WB partner HEIs will be trained how to use up-to-date laboratory equipment and software purchased during the SWARM project realization.</p>
Due date	14-09-2021

• Format of the Summer School 2021

- Online lectures + workshops (June 2021)
- Participants of the online course: 1 week in November – decision in October (5 days funded from SWARM + co-funding from NMBU)

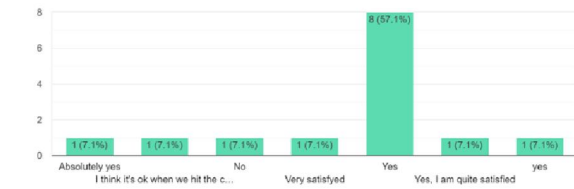
• 2 students participate from SWARM project:

UPKM	Isidora Lazović	isidora.lazovic474@gmail.com						
UPKM	Daria Ilić	dariailic23@gmail.com						
265	357	183	153	177	150	178	118	325
-	385	184	152	117	150	181	117	310

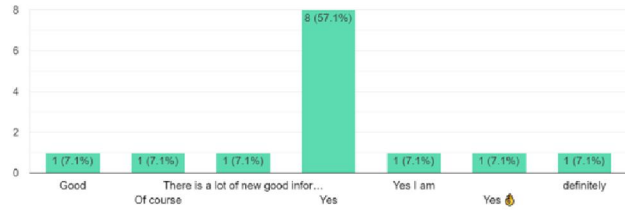
The list of WB staff per institution

- BOKU- UNMO (1), TCASU (1), UoM (1); UACEG – UNI (2), UPKM (1); UL – UNS (1), UNSA (1), UoM (1); AUTH – UNI (2), UNSA (1); UNIRIFCE – UNI (2), UPKM (1); NMBU – UNS (1), UNMO (1)

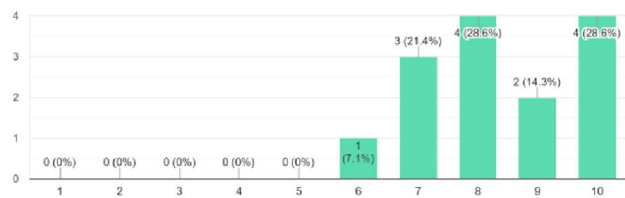
Are you satisfied with the help during the application phase? (Invitations, enrolment, etc)
14 responses



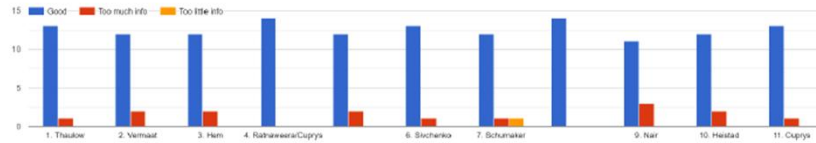
Are you satisfied with the teaching material?
14 responses



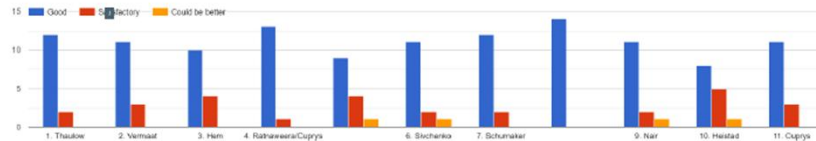
Usefulness of what you learned for your current studies and future profession?
14 responses



How do you evaluate the lecture content?



How do you evaluate the lecture quality?





What is your overall impression of the course? 14 responses

I have only positive emotions after the course. I learned a lot and improved my English level. At first, I had the impression that there was a very difficult job ahead, but as I got acquainted with the material and the teachers, it was very interesting, and the learning process itself was delayed due to interest.

Great, good work

Every thing were fine

generally, i liked the way lectures was represented. I mostly enjoyed participating in group work such as games and discussion.

It was interesting experience

Wonderful

I got pleasure during the course, I met many students and professors who did not recognize before

Great course with a lot of useful information, but lack of practical work due to quarantine restrictions

Honestly, sometimes it was boring. But it was interesting when we played games and spoke with students.

I liked the attentiveness of the teachers and their willingness to answer questions.

It was good. It has expanded my current knowledge a bit and gave practical skills with programs I've never used before. If I was still getting my bachelor's degree I would've learnt more because some information from course I've only learnt in my master's year. It was nice to connect general knowledge about some subjects I've got in university with water treatment during this course. Also I liked that lecturers were trying to engage audience to participate in discussions at lectures and gave time to prepare instead of keeping talking to black screen or waiting for immediate response.

Well organized and useful course

I was very happy with the educational process. I was glad to meet interesting people and even make new friends.



Glocal Adaptation of Nanotechnologies in Water Treatment

Joint course by:



Stony Brook University

Established with support from:



**Glocal = A glocal approach means presenting global knowledge within a local context. It encapsulates the concept 'think globally, act locally'.*

What is COIL?



Collaborative Online International Learning (COIL) connects students and professors in different countries for collaborative projects and discussions as part of their coursework.

COIL Collaborations between students and professors provide meaningful, significant opportunities for global experiences built into programs of study. COIL enhances intercultural student interaction through proven approaches to meaningful online engagement, while providing universities a cost-effective way to ensure that their students are globally engaged.

The SUNY COIL Center pioneered the COIL model more than 15 years ago, and has been helping professors and institutions realize the power of COIL ever since.

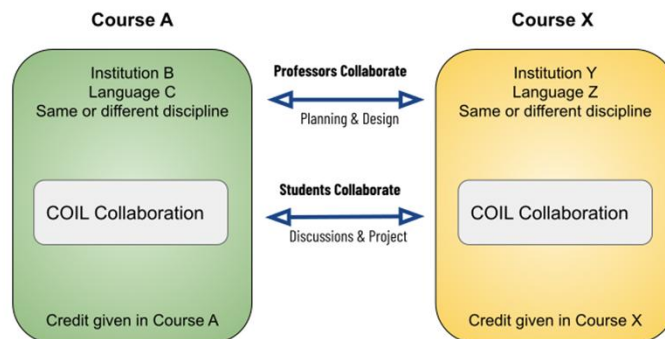
We invite you to explore our website and learn about the possibilities when you bring COIL into your teaching and learning practice.

What is COIL?

COIL Methodology

COIL Collaborations are developed by partnering professors from different institutions who want to enrich their courses with student interaction and collaborative learning. Professors work together to design and implement the COIL Collaboration, allowing COIL to be customized to meet the needs of any class, in any discipline. It takes planning and careful attention to design to have a successful COIL Collaboration that benefits students, professors and institutions.

Visit [What is COIL?](#) to learn more and see examples of past COIL Collaborations.





- **Goals of Module:**

By the end of this module the successful student will understand how sustainable nanotechnologies are used in water treatment from a glocal* perspective.

- **Learning Outcomes:**

1. Define water pollution as an element of environmental engineering.
2. Demonstrate how Norway, the EU and the U.S.A. address water pollution
3. Attain multiple perspectives on water treatment and management
4. Explain how micro pollutants in water can be managed using sustainable nanotechnologies.

- **Online Intercultural Competencies:**

1. Students will develop intercultural awareness
2. Students will develop virtual intercultural interaction skills
3. Students will develop global collaborative skills



Enrolment requirements

- If you have taken THT311, then you are eligible for the SUNY.SB-NMBU certificate and 3 ECTS NMBU certificate
- If you have not taken THT311, then are eligible only for the SUNY.SB-NMBU certificate (no ECTS)
- **Enrolment process:**
 - Please send an email to Susuann with student name, email, university and year of study (xth year in MSc etc)



- **20th September: deadline for formal enrolment at NMBU (with ECTS)**
- **20th October: without formal enrolment but with project certificate – *must have support letter from the teacher from the partner university***
 - 25 Oct (Monday): meet & greet
 - 26 Oct (Tuesday): Assignment 1: Discussion board upload – about yourself/college/country etc
 - 27 Oct: (Wed) 2 lectures (Lecture 1: Elements of environmental engineering and science: water pollution & Lecture 2: Global cases of water pollution)
 - 29 Oct (Friday): 2lectures (Lecture 3: Surveillance and management of emerging micropollutants in water using nanotechnologies & Lecture 4: Using nanotechnologies for water and wastewater treatment processes)
 - 5 Nov (Friday): Assignment 2 (Essay 1500 words + 4 PPT slides)
 - **20th Jan (Thursday): Assignment 3** – extended project report on nanotechnology in water (4000 pages, 12-15 pages)
- **Two certificates:**
 - SUNY.SB-NMBU “Joint certificate of completion”: completes with the submission of short essay on 5th Nov
 - 3 ECTS certificate from NMBU: work completes with the submission of an extended essay