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Law on Higher Education, article 111 („Official Gazette of the RS“ no. 88/2017) prescirbes that higher education institutions can implement within their activity educational long- life learning programs, outside of the study programs that they were given accreditation for. Relying on this provision, project participants organized trainings related to certain aspects of waste management during the implementation of the WamPPP project.

The aim of each training was to help participants gain new and improved knowledge and skills for concrete purposes, help them learn to do something or to think about something in a different way.

It is all about the change of behaviour and gain of new skills for new challenges.

raining participants within this project mainly belong to the so called ”informal sector”, that is to people who come directly in touch with waste and who need to be trained how to protect themselves from the dangers they face in their work places. Apart from them, representatives of bussiness circles and non-governmental organizations or even media can also become interested in participation in the training. Training instructors are the professors of vocational studies, lecturers or teaching assistants.

Main stages of the trainig are:

1. Identification of the needs for training in an organization or in individual participants.
2. Development of learning outcomes and training programs.
3. Collecting resources for the training and the implementation of the training itself.
4. Training evaluation and audit.

Training is carried out in the following way:

- Awareness training is to make participants aware of some issues and improve the levels of their knowledge and attitudes in a specific area. This level of training aims to change the behaviour of the participants.
- Knowledge training is designed to offer participants a broader knowledge on a specific issue. The amount of knowledge gained during the training can be specified and tested.
- Motivation training is designed to inspire the participants to take concrete actions that have a special benefit for somebody or something.
- Skills or change of habits training is designed to give tools to participants to perform differently at work. What is learned is the change in performing specific skills, so the results of the training can be checked. Skills can include personal skills (for instance, time management or keyboard typing skills) or groups skills (for example, procedures for problem-solving in teamwork).

Training evaluation:

Everyone has specific inerpretation of what the success of training means. Since there are many variables that need to be taken into consideration and that influence the process of training, there are many ways to measure training in order to see if the training was efficient and useful. Trainings are measured through:

1. Reaction- how the participant reacted to the training
2. Learning-how well the participant applied the new skills or knowledge
3. Behaviour-what changes in behaviour at work are the result of the training
4. Results- what the results of training were for the organization

Different methods for evaluation of the training were used: questionnaires, phone interviews, group discussions, guided-interviews among participants themselves, and similar.

Upon training, certificates were issued if the organizers of the training were asked to do that.

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REPUBLIC OF SERBIA

COLLEGE OF APPLIED TECHNICAL SCIENCES NIS

Pursuant to article 111 of the Law on Higher Education ("Official Gazette of RS", no. 88/2017), article 49 of the Labor Law, article 12 of the Rulebook on Preventive Measures for Safe and Healthy Work with Working Equipment ("Official Gazette of RS ", no. 23/2009, 123/2012 and 102/2015) and the Decision of the Teaching Council of the CATS NIS number: 02-646 dated 21 June 2016, it is issued a

CERTIFICATE

on professional competence

born _____ in a place _____

municipality _____ Republic _____

is professionally competent
for safe and healthy work
in recycling centers and communal entreprises

Certificate is issued on the basis of the demonstrated success at the theoretical part of the exam held _____ and the practical part of the exam held _____, record number _____.

Number: _____

In Nis, _____

P.S. _____
director

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WAMPPP
561821-EPP-1-2015
EPPKA2-CBHE-JP

WAMPPPs

CATALOUGE OF TRAININGs

TITLE of training course	description	Target group
1. ASBESTOS WASTE AND RECYCLING POSSIBILITIES	A material which nas been extremely exploited in the past, and it was not known its adverse effects, is asbestos. The process of removing asbestos and asbestos-containing materials is very expensive. Disposal of waste containing asbestos in the Republic of Serbia has not been solved. Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	Construction industry Group size: • Up to 20 attendees
2. GENERATION OF HEAT AND ELECTRICITY IN THE PLANTS FOR INCINERATION OF MUNICIPAL SOLID WASTE	Use of energy of municipal solid waste is encouraged to reduce consumption of fossil fuels and reduce emissions of gases that cause the greenhouse effect. Incineration of solid waste is a process of controlled combustion of waste, in order to obtain thermal energy and reduce the volume of waste. Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Employees in public utility companies in charge of waste treatment planning, • Employees in local self-government bodies, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: • Up to 10 attendees
3. POSSIBILITY OF USE WASTE MATERIALS FROM AGRICULTURE FOR ENERGY	The biomass usually includes substances of plant material, including products, by-products, and waste or scraps of plant mass without harmful and dangerous substances. Of all the fuels that are in use today, only biofuels meet the criteria of a closed system in terms of creating carbon dioxide and solid material combustion products. Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Agriculture sector, • Owners of small and medium-sized enterprises that generate larger quantities of agricultar and biomass waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: Up to 20 attendees
4. DETERMINATION OF POLYCHLORINATED BIPHENYLS IN WASTE	Because of its toxic properties, polychlorinated biphenyls may cause serious health damage, the occurrence of cancer, birth defects, reproductive and	Chemical industry Employees in cemicla industry Group size:

	immune systems. A number of processes are used for decommissioning waste contaminated with polychlorinated biphenyls, which are: combustion, pyrolysis and dechlorination process in a plasma arc.	Up to 20 attendees
5. WASTE REDUCTION IN THE APPLICATION OF NEW TEHNOLOGIES	Graphic industry has a negative impact on the environment due to the high consumption of energy and chemicals, as well as the accompanying waste. One way of reducing waste is the use of new technologies, wherein the chemical treatment is minimized. Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastru-cture are limited Group size: • Up to 10 attendees
6. WASTE MANAGEMENT IN SME FOR METAL PROCESSING INDUSTRY	Uncontrolled burning of tires is a problem because it forms a thick smoke, which may contain pollutants harmful to human health. Techniques for recycling of rubber are grinding (milling) and pyrolysis Training plan: • Theoretical block: 3 hours, Practical block: 5 hours	• Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: • Up to 10 attendees
7. THE IMPACT OF AUTOMATIC CONTROL IN WASTE MANAGEMENT	Aim of this unit is to introduce elements of automatic control, as well as its positive impact on reducing waste, saving energy and environmental protection. The course participants will learn about the structure and properties of system for temperature control. Training plan: • Theoretical block: 4 hours, Practical block: 4 hours	• Employees in public utility companies in charge of waste treatment planning, • Employees in local self-government bodies, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: • Up to 10 attendees
8. RECYCLING OF TYRES AND ITS EFFECT ON ENVIRONMENT	Uncontrolled burning of tires is a problem because it forms a thick smoke, which may contain pollutants harmful to human health. Techniques for recycling	• Industry of tyres and recycling sector of tyres Group size:

	of rubber are grinding (milling) and pyrolysis. Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	Up to 10 attendees
9. USE OF MUNICIPAL SOLID WASTE IN FOOD PRODUCTION	The results showed that the different municipal solid waste can be variously used according to the process of food production. Using municipal solid waste in the process of food production can be achieved positive effects such as safe and affordable waste treatment options, reducing carbon dioxide emissions, reducing energy import dependence and avoiding methane emissions from landfills. Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Agricultural producers, • Independent entrepreneurs; • Students Group size: Up to 10 attendees
10. PRODUCTION OF BIODIESEL	Training Objectives: • Theoretical training of attendees on the possibilities for production of biodiesel • Theoretical training of raw materials for biodiesel production, ways of purifying raw materials and chemical process of production • Training attendees to use biodiesel production plants on the example of De Lorenzo's DL BIO-10 Training plan: Training outcomes: • Attendees acquire knowledge necessary for planning the production or collection of raw materials and designing the required capacities of the biodiesel production plant • Attendees are trained to manage the process of biodiesel production; • Theoretical block: 3 hours, Practical block: 3 hours	• Agricultural producers, • Independent entrepreneurs; • Students Group size: Up to 10 attendees
	Training Objectives: • Theoretical training of the attendees on the advantages	• Employees in public utility companies in charge of waste treatment planning,

11. INCINERATOR OF WASTE	and disadvantages of thermal treatment of waste, • Training attendees for the use of general purpose incinerators on the Inciner8 I8-10S, • Analyzing the flue gas composition according to the composition of the waste, using the Bosch BEA350 and RTM 430 analyzers Theory teaching: • Waste disposal - problems: process waters and methane; • Thermal treatment of waste: types of treatments, possibilities in terms of waste diversity, thermal treatment products; • Legislation: permit for treatment, waste testing, ash disposal; • Benefits of insemination: reducing waste volume, reducing transport costs, generating heat and / or electricity; • Disadvantages and problems of incineration: costs of plant exploitation, generation of harmful gases, need for sorting; • Thermal treatment of hazardous waste; • Thermal treatment and recycling Training outcomes: • Attendees have the knowledge necessary to make a decision on how to treat waste; • The attendees are familiar with the problems and costs of thermal treatment of waste as well as the possibilities for utilizing the liberated energy; • Attendees are trained to handle general purpose incinerators and gas analyzers; • Raising awareness among participants about harmful	• Employees in local self-government bodies, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: • Up to 10 attendees

	products of combustion of waste and the need for their further treatment Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	
12. Defining the thermal power of solid waste using a calorimeter	Course content: Calorimetry method Charachersitic of calorimeter he calorimeters are used to Dtermine the experimental power of fuel or some other substances, especially with unknown chemical composition. • Heat output during the incineration of the sample in athmospfere of cooled flue gas • Theoretical block: 3 hours, Practical block: 3 hours	• Employees in public utility companies in charge of waste treatment planning, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited. Group size: Up to 20 attendees
13. Determination of turbidity of the waste water using a turbidimeter	Course content: Turbidimetry Nephelometry Turbidometric measurements Factors that affect the scatter of light: • Particle concentration • Particle sizes • Wavelength • Observation distance, • Molecular weight of particles Theoretical block: 3 hours, Practical block: 3 hours	• Employees in public utility companies in charge of waste treatment planning, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited.
14. Training for loading and securement of hazardous waste for transport	Course content: • Transport of hazardous waste as a basic logistic activity conceptual definition of transport of hazardous waste transport modes of hazardous waste: • transport packaged of hazardous waste,	• producer of hazardous waste, • owner of hazardous waste, • dangerous goods carrier, • operator of a facility for treatment of hazardous waste, • persons at the place of disposal of hazardous waste.

	transport of of hazardous waste in bulk, • Transport of of hazardous waste in tanks. • Participants in the process of transport of hazardous waste • Quantity, dynamics of hazardous waste generation and hazardous wast • Loading, transporting and unloading hazardous waste Theoretical block: 3 hours, Practical block: 3 hours	Group size: Up to 20 attendees
15. DOCUMENT FOR FLOW OF WASTE MANAGEMENT	1. Law on Waste Management 2. Rulebook on the form of the Waste Document Document 3. Document on the movement of waste A - Data on waste B - Data on waste producer C - Data on the waste carrier D - Data on the recipient Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Employees in public utility companies in charge of waste treatment planning, • Employees in local self-government bodies, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: Up to 20 attendees
16. NON-HAZARDOUS WASTE MANAGEMENT	Course content: treatment and management of nonhazardous waste General division of waste: According to the composition According to the place of origin According to toxicity Prevention of waste generation; Minimization of waste generation; Solving the problem of waste at the place of origin; Principle of separate sorting and collection of waste; Recycling or other waste management methods; Rational use of existing devices and construction of new processing systems;	• Employees in public utility companies in charge of waste treatment planning, • Employees in local self-government bodies, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited. Group size: Up to 20 attendees

	Ecologically sustainable final disposal of waste; The principle of full pollution monitoring in order to conserve natural resources. Training plan: Theoretical block: 3 hours, Practical block: 3 hours	
17. HAZRDOUS WASTE MANAGEMENT	Course content: Treatment and management of hazardous waste. Hazardous waste, Chemical waste, Characteristics of chemical waste, Generation of chemical waste, Hazardous Waste collection, Hazardous Waste storage, Temporary storing of laboratory chemicals material containing dangerous substances Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Employees in public utility companies in charge of waste treatment planning, • Employees in local self-government bodies, • Owners of small and medium-sized enterprises that generate larger quantities of municipal waste in the areas where the possibilities for waste disposal and the development of municipal infrastructure are limited Group size: Up to 20 attendees
18. ENVIRONMENTAL PROTECTION AND POLLUTION	Course content: Environmental protection and pollution. 1.Principles of enviromental protection a.Concept of sustaniable development 2.Recycling, Reuse, Reduce 3.Landfill 4.Energy Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Employees in public utility companies in charge of waste trea-tment planning • Students • Pupils Group size: Up to 20 attendees
19. OBLIGATIONS OF GENERATOR OF	Course content: 1. Waste management 2. Classification of waste	• Employees in public utility companies in charge of waste treatment planning,

WASTE AND WASTE OWNER	3. Responsibility of waste producers 4. Responsibility of the carrier of waste 6. Storage and labeling of waste 7. Document on the collection of hazardous and non-hazardous waste 8. Management of waste oils 9. The prescribed prohibitions prescribed by law Training plan: • Theoretical block: 3 hours, Practical block: 3 hours	• Employees in local self-government bodies, • Owners of small and medium-sized ente-rprises that generate larger quantities of mu-nicipal waste in the areas where the possi-bilities for waste disposal and the develo-pment of municipal infrastructure are limited Group size: Up to 20 attendees
20. OCCUPATIONAL SAFETY AND HELATH FOR EMPLOYEES ON LANDFILL	Course content: Occupational safety and helath for employees on landfill on postiton Operator on the scale Communal worker Worker on sorting Worker sorting by fractions Operator of the press Training plan: • Theoretical block: 3 hours, Practical block: 8 hours	• Employees in landfill companies Group size: Up to 20 attendees