Summer School Learning Plan

„Scientific Excursion around Sustainable World“

The central theme of the summer school is *sustainable development*. Sustainability has three main pillars: economic, environmental, and social. The *sustainable development* goals are universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. For this reason, *sustainable development* is part of the education of most countries around the world. The GEM summer school focuses on presenting the role of science and research in fulfilling the economic, environmental, and social goals of *sustainable development*. The summer school includes outdoor STEM activities, the use of information and communication technology for simulations and modelling of processes in the landscape and group work, students' projects, based on the principles of inquiry-based learning. The environmental goals of sustainable development are in the focus of the summer school. Participants, teenager girls, will gain knowledge that will help them realize the role of the individual and his conscious steps in the sustainability of life in their surroundings, region and on the planet. The topics that the girls will address in their projects will teach them to understand the context of human activities with respect to the environment, the protection of plant and animal species and to consider and process information in a scientific context. The acquired knowledge and skills will enable girls to prepare activities aimed at sustainable development for their children's and adult clients in tourism.

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CPU Nitra GEM Summer School

Target Group:

15 -18 years old, secondary vocational school students - girls

Venue:
Constantine the Philosopher University in Nitra – university campus; Nitra
Vocational School of Tourism – school campus; Nitra
ZOO Bojnice

Transportation to the venue / digital access to the Summer School:

Special bus transport from Nitra to ZOO Bojnice; distance cca. 85 km;

Subsistence:

Lunch and snacks will be provided

Contact person for girls and their guardians:

Mgr. Jarmila Čameková, secondary school teacher

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Schedule

Day 1

	Location: Secondary vocational school of tourism
9:00 – 9:30	Introduction of the GEM project, project partners and summer school plan
	Icebreaking activities
9:30 – 10:30	Lecture
	Basic goals and principles of sustainable development and the role of science in achieving the goals of sustainable development
10:30 – 11:00	Pause
11:00 – 13:00	Workshop
	Socio-economic goals of sustainable development: an interactive simulation game aimed at finding a compromise between socio-economic and environmental activities of people at the global and local level
13:00	Lunch

Day 2

	Location: ZOO Bojnice
9:00 – 10:00	Lecture
	• Environmental goals of sustainable development • The role of the ZOO in the implementation of these goals at the national and international level
10:00 – 11:00	Workshop
	• Terrain research workshop focused on biodiversity protection
10:00 – 13:00	Excursion
	• scientific excursion – applied research and development in the ZOO • interactive educational trail with ICT support focused on the discovering of animal's world
13:00	Lunch

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Day 3

	Location: Constantine the Philosopher University in Nitra
9:00 – 10:00	Lecture
	• The environmental goals of sustainable development • The role of the Geographical information systems (GIS) in the implementation of these goals at the at the global and local level
10:00 – 11:00	Indoor workshop using ICT tools
	Working with modern 3D applications of geographic information systems
11:00 – 13:00	Outdoor workshop using ICT tools:
	• Interactive outdoor workshop Landscape from a mathematical point of view. • Assignment of student projects aimed at finding innovative ways to transform tourism into sustainable tourism using scientific method.
13:00	Lunch

Day 4

	Location: Constantine the Philosopher University in Nitra
9:00 – 11:00	Students' projects presentations
11:00 – 12:00	Summary, evaluation, feedback
12:00	Lunch

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Learning Activities

Learning Activities	STEM/ICT subject knowledge	Knowledge of inspiring role models and their meaning	Knowledge about the STEM/digital world of work	Entrepreneurial mind-sets	Transversal skills
Introduction Icebreaking activities		x	x		x
Sustainable development, lecture	x	x	x	x	x
Workshop: Socio-economic goals of sustainable development	x	x	x	x	x
Lecture: Environmental goals of sustainable development	x	x	x	x	x
Workshop: Biodiversity protection; terrain research	x	x	x	x	x
Scientific excursion	x	x		x	x
Interactive educational trail	x		x		x
Lecture: GIS	x		x		x
Workshop: GIS	x	x	x	x	x
Interactive outdoor workshop	x	x	x	x	x
Project	x	x	x	x	x

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The summer school focuses on presenting the role of science and research in fulfilling the economic, environmental, and social goals of sustainable development, thus bringing learning into real life contexts. Additionally, it fosters the ICT learning as the activities include outdoor STEM activities with the use of information and communication technology for simulations and modelling of processes in the landscape and group work. Students' projects are based on the principles of inquiry-based learning.

Participants will observe selected protected areas: botanical garden and protected landscape area and will learn about landscape scientific research. They will experience some field research activities, but also work in laboratory. Participants will discuss about country, landscape characteristics, and prepare outdoor walk with parts of important scientific elements and features about objects in the landscape. All of the activities will be supported by digital technologies.

Through the involvement of female experts, the girls will experience constant role models and will be able to engage in conversations and discussion. By starting the summer school in their very own school, the girls will be able go into STEM world step-by-step, maintaining the close and familiar learning atmosphere which is beneficial for learning.

Participating girls will learn about the goals and principles of sustainable development and the possibilities of their implementation in special methods and forms of research:

- how to design experimentation, what are the specifics of laboratory and field research,
- how to use geographic information systems for modelling and simulation of processes in the country,
- what are the possibilities of using remote sensing of the Earth to gain new knowledge about the current state of the environment,
- how to scientifically demonstrate the impact of human activities on the environment,
- how to understand the landscape uniqueness suitable for research to popularize research,
- how to prepare a thematic walk for tourists with the support of ICT and digital technologies.

The main idea is to gain in-depth knowledge of informed European citizenship with a focus on comprehensive environmental protection in terms of sustainable development.

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Lecturers and mentors

Mgr. Jarmila Čameková - teacher of Geography, History and Tourism at the Secondary School of Tourism in Nitra, expert in the field of creating interactive educational trails with the support of ICT

Ing. Andrea Klasová, - Specialist in the protection of endangered species in zoos. She is an employee of the ZOO Bojnice in the position of public relations and lector of environmental education

prof. Mgr. Ivan Baláž, PhD. – Expert in zoology, ecology and protection of small terrestrial mammals

Ing. Katarína Vajlíková – expert in the protection of meadow ecosystems and environmental education

Mgr. Imrich Jakab, PhD. – expert in GIS, ICT and digital tools in education; expert in environmental formal and informal topics pedagogy; indoor and outdoor pedagogy; experience projects manage

doc. PaedDr. Soňa Čeretková, PhD. – expert in STEM education, digital tools in education and project manager

CPU Nitra GEM Summer School Support Site

You can find more information about the Summer School in the national language by following this link: https://www.fpvai.ukf.sk/sk/vyskum-fpv-ukf/projekty/52-veda-a-vyskum/projekty/1473-gem

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