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GEO ERGON PAIDEIA "START UP FARM: SKILLS FOR FUTURE ECO FARMERS"

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COURSE DESCRIPTION
ECO-FARMING

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Revision History

Revised by	Date	Revision Control	Revision Reason
Anna Bur	13.10.2017	First Version	Proofreading
…			

Course title

"Eco-Farming"

Name of trainer/s

Katharina Laub

Purpose of the course

- Understanding that agricultural activities affect positively and negatively the environment
- Being aware of the connection and dependency between ecosystem, food production and biodiversity

Objectives of the course

- Understand the linkages between agricultural activities and environmental protection
- Learning mitigation options for agricultural activities
- Get acquainted with the different kind of ecosystems and evaluate allocate their regional ecosystem
- Get to know the importance of biodiversity and what small steps everyone can do to improve it

Teaching and Learning Methods

Teaching approach

Extensive knowledge sharing and exchange of experiences to students through a combination of theoretical and practical approach

Delivery method

Face-to-face

Distance learning

Course content

In the following on outline of the course content will be listed. The content of each session will be described with the goals the teaching had what the students should have learned and how his knowledge can be applied.

Introduction to ecological farming

1. Definition and principles of Eco-farming:	• Students know the common definition and concept of eco-farming. • They can use their own language to describe eco-farming • They know the key principles of eco-farming.
2. Differences between ecological farming and organic farming:	• Students get to know the concept of organic farming. • Students can distinguish between eco- and organic-farming.
3. Implementation of Eco-farming	• Students get to know the steps to implement eco-farming. • Students can describe how to implement eco-farming. • Students can adapt the knowledge of eco-farming implementation on their on regional environment.
4. Ecological and economic benefits of eco-farming	• Students know about ecological benefits of eco-farming. • Students know about the economic benefits of eco-framing. • Students can talk about the benefits of eco-farming with their own words.

GHG emissions of agricultural practices

1. GHG emissions of agricultural practices	• Students learn about GHG emission. • Students get an overview of GHG emission in the agricultural sector. • Students know about GHG emission of the agricultural practice.
2. GHG emissions of the different economic sectors	• Students learn about different economic sectors. • Students can distinguish between different economic sectors. • Students know about GHG emission within the different economic sectors.
3. Reasons for changing agricultural practices	• Students learn about ecological problems of agriculture. • Students know about sociological problems of agriculture. • Students learn about problems of the food providing system. • Students. • Students know the problems of agricultural practice and can summarize reasons for changing. • Students can give examples of reasons to change the agricultural practice.
4. Sink and sources of GHG emissions in agriculture (CO_2, N_2O, CH_4)	• Students learn about sinks of GHG emission. • Students learn about sources of GHG emission. • Students can find examples for sinks and sources of GHG emission within their own regional environment.

Adaptation measures of agricultural practices to reduce GHG emissions

1. Different soil management practices	• Students learn about tillage. • They can distinguish reduced tillage form other ways of soil cultivation. • Students know about cover crops. • Students learn about crop rotation. • Students can talk about crops that are used for crop rotation. • Students learn about manure management and its importance. • Students can find examples for soil management practices within their own region.
2. Influences of soil management practices on the local environment	• Students learn about the dependency between soil management practice and soil health. • Students learn about the dependency between soil management practice and air quality. • Students learn about the dependency between soil management practice and water quality. • Students learn about the dependency between soil management practice and productivity. • Students can talk about good case and worst case they know from media.
3. Ecological weed management	• Students learn about weed management.

	• Students can distinguish ecological weed management from other forms.
4. Nutrient management	• Students learn about nutrient management. • Students know about GHG emissions from livestock production through storage and application. • Students can give examples of it from their own region.
5. Anaerobic digestion as a nutrient recycling option	• Students learn about anaerobic digestion in general. • Students know the benefits of anaerobic digestion as a nutrient recycling option.

Introduction biodiversity and ecosystems

1. Definition and types of biodiversity (variety of species, genetic diversity and biodiversity of ecosystems)	• Students know the definition of biodiversity. • Students get introduced to different types of biodiversity. • Students learn about the variety of species. • Students know about the genetic diversity and its importance. • Students learn about the biodiversity of ecosystems.
2. Explanation and application of the types of ecosystems	• Students get to know different types of ecosystems. • Students learn about the explanation and application of the types of ecosystems.
3. Importance of biodiversity	• Students know about the importance of biodiversity. • Students can explain the importance of biodiversity for his own region.

4. Threats of and for biodiversity (invasion of foreign species, habitat loss, pollution, climate change, hunting)	• Students learn about different threats of and for biodiversity. • Students know about the invasion of foreign species. • Students learn about habitat loss. • Students can discuss different ways of habitat loss. • Students learn about different ways of pollution. • Students know about climate change. • Students can list effects of climate change on biodiversity. • Students learn about hunting of rare species.

Interaction between agriculture and biodiversity

1. Different impacts of agriculture on biodiversity.	• Students learn about impacts of agriculture on biodiversity. • Students can list different impacts on biodiversity. • Students can talk about regional effects of agriculture on biodiversity.
2. Connection between human systems, agriculture and food system.	• Students know about the connection between agriculture, society and food system.
3. Link between biodiversity and ecosystem.	• Students learn about the link between biodiversity and ecosystem. • Students can give examples of different connections.
4. Methods and techniques for agriculture to support biodiversity	• Students get to know different methods and techniques for agriculture to support biodiversity. • Students learns about examples of methods and techniques.

- Students can give additional examples out of his own knowledge background.

Educational material (materials /sources/ resources required to complete the course)

- Websites
- Books
- Previous studies
- Presentations

The reference material, the bibliographic review, the proposed supplementary literature and everything else concerning the educational material was posted on the platform 15 days before the start of the courses.

Keywords

- Agriculture,
- Ecological Farming,
- Biodiversity
- Environment Protection.