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SSPICE IT!

Sustainability Skills Program for International Catering operators and Entrepreneurs through Integrated Training

SSPICE IT! project is co-funded by the European Commission within the Erasmus+ programme.

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Teacher's manual

Module 2

MODULE TITLE	How to implement circular practices in one's business.
HOURS	15

SUMMARY OF THE MODULE

Throughout the manual, we delve into various aspects of sustainable food practices. We explore the importance of energy-efficient cooking processes, composting, packaging reduction, and the adoption of sustainable technologies in professional kitchens. We also discuss the benefits of sustainable food practices, such as reduced environmental impact and enhanced food quality.

MAIN TOPICS COVERED

- Energy efficiency.
- Local food.
- Circular food system.
- Food Waste.
- Sustainable packaging.
- LTA.

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ADDRESSED SKILLS

#7 Identify and implement practices coherent with sustainable waste management.

#4 Adopt sustainable practices in one's job.

#8 Develop a menu focused on seasonal ingredients, produced locally, using smaller amounts of animal products in dishes, and expanding plant-based dishes;

SKILLS MEASUREMENT

N°	Skill	Descriptor	Level 1	Level 2	Level 3	Level 4	Level 5
7	**Identify and implement practices coherent with sustainable waste management.**	Ability to recognize, assess, and apply environmentally responsible methods for handling and disposing of waste materials. Create strategies to reduce, reuse, recycle, and properly dispose of waste in ways that minimize negative impacts on the environment and human health. Staying informed about relevant regulations, promoting waste reduction within communities or organizations, and adopting practices that align with the principles of sustainability to ensure a cleaner and healthier planet for future generations. situations promptly and flexibly.	Demonstrates basic understanding of the concept of sustainable waste management. Can identify common types of waste and their environmental impact. Aware of the importance of reducing, reusing, and recycling.	Possesses in-depth knowledge of sustainable waste management principles and practices. Understands the life cycle of different materials and their impact on the environment. Familiar with local and international regulations related to waste management.	Able to apply sustainable waste management practices in real-world scenarios. Identifies opportunities for waste reduction and resource recovery. Implements basic waste segregation and recycling initiatives.	Develops comprehensive waste management plans aligned with sustainability goals. Integrates waste reduction strategies into organizational processes. Evaluates the environmental and economic impact of waste management initiatives.	Leads and inspires teams to adopt sustainable waste management practices. Innovates new approaches and technologies for waste reduction and recycling. Actively engages with stakeholders to promote a culture of sustainability.

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4	**Adopt sustainable practices in one's job.**	Integrating environmentally conscious actions and behaviours into one's daily work routines and responsibilities. Make choices that reduce the ecological footprint associated with job tasks, such as conserving resources, minimizing waste, and supporting environmentally friendly initiatives. Contribute to the broader goals of sustainability within their organizations and industries, ultimately helping to create a more environmentally responsible and resilient workplace.	Demonstrates basic understanding of the concept of sustainability in the workplace. Recognizes the importance of resource conservation and environmental responsibility. Aware of the organization's sustainability policies and guidelines.	Possesses a deeper understanding of sustainable practices relevant to their specific job role. Demonstrates knowledge of eco-friendly alternatives and best practices in the industry. Familiar with the environmental impact of their job-related activities.	Integrates sustainable practices into daily work routines and processes. Actively seeks ways to minimize resource consumption and waste generation. Participates in workplace initiatives promoting sustainability.	Develops and implements strategies to embed sustainability into job functions. Collaborates with colleagues to identify and implement sustainable solutions. Demonstrates the ability to measure and report on the impact of sustainable practices.	Leads by example, inspiring colleagues to embrace sustainable practices. Advocates for sustainable policies and initiatives within the organization. Takes a proactive role in influencing positive change toward sustainability.
8	**Develop a menu focused on seasonal ingredients, produced locally, using smaller amounts of animal products in dishes, and expanding plant-based dishes.**	Knowing the main principles of a sustainable diet. Being able to create and prepare new recipes following these principles. Being able to design and prepare whole menus following these principles.	Demonstrates basic understanding of the importance of seasonal and local ingredients. Recognizes the benefits of reducing animal product consumption for sustainability. Aware of the availability of plant-based alternatives.	Possesses knowledge of seasonal produce and their flavour profiles. Understands the environmental impact of food choices and sourcing. Familiar with basic plant-based cooking techniques and ingredient substitutions.	Develops menus that incorporate seasonal and local ingredients. Reduces the use of animal products in dishes without compromising taste. Expands plant-based options on the menu.	Creates innovative dishes that showcase the flavours of seasonal produce. Designs plant-based dishes that appeal to a diverse range of tastes. Implements creative cooking techniques to enhance plant-based and locally sourced ingredients.	Leads the development of a comprehensive seasonal, local, and plant-based menu. Collaborates with local producers to strengthen the supply chain. Advocates for sustainable and plant-forward practices in the culinary industry.

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EXERCISES

Exercise #1 – Reduce and reuse food waste and leftovers	
Pre-requisites	Knowledge of the principal cooking processes and the way we handle the food wastes and leftovers.
Time	1 hours
Tools	PC or Smartphone, internet connection, optional kitchen tools
Addressed skills	#7 Identify and implement practices coherent with sustainable waste management.
Addressed level of the skills	#7 Level 5: I can make decisions evaluating the different elements in a situation that is uncertain and ambiguous.
Objectives	1. Recognize, assess, and apply environmentally responsible methods for handling and disposing of waste materials. 2. Create strategies to reduce, reuse, recycle, and properly dispose of waste in ways that minimize negative impacts on the environment and human health.

Instructions to the students:

Carefully read the module chapter and study the food offer of your school cafeteria.

After analysing the situation, create a strategy to reduce food waste and to reuse leftovers, by implementing technical recipe sheet and analysing the results you get from them.

Criteria:

- The student can identify the pros and contras of the food offer from the school cafeteria: 1 pt.
- The presented strategy is feasible and realistic: from 0 pt. (unrealistic) to 4 pt. (perfectly feasible).
- The leftovers reuse and proposals are healthy: from 0 pt. (poisonous) to 4 pt. (healthy).
- (Bonus) The strategy is original or offers a new twist to manage food waste and leftovers: from 0 pt. (unoriginal) to 2 pt. (never seen before).

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CRITERIA	NOTATION				
	0	1	2	3	4
The student can identify the pros and contras of the food offer from the school cafeteria					
The presented strategy is feasible and realistic					
The leftovers reuse and proposals are healthy					
The strategy is original or offers a new twist to manage food waste and leftovers					
NOTATION	**/12**				

Comments:
A variation of this exercise could be to ask the students to buy ingredients and prepare the meal *in situ*. One half-day would be allowed to this exercise, then.

Exercise #2 - Designing Sustainable Packaging Solutions exercise	
Pre-requisites	Knowledge of the Sustainable Packaging Solutions, the LTA phases and how can we adapt and use better packaging solutions.
Time	1,5 hours
Tools	PC or Smartphone, internet connection, different kind of materials, etc…
Addressed skills	#4 Adopt sustainable practices in one's job
Addressed level of the skills	#4 Level 5: Develops and implements innovative sustainability solutions.

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Objectives	1. To engage students in a design thinking exercise to develop creative and sustainable packaging solutions for a specific product or scenario.

Instructions to the students:

In groups, carefully read the chapter and do the following exercise:

1. **Understand the Problem:** Begin by selecting a product or scenario for which sustainable packaging solutions are needed. This could be a food product, a personal care item, or any other consumer product. Ensure that the selected item has packaging-related sustainability challenges.

2. **Empathize:** Put yourselves in the shoes of the consumer. What are the consumer's needs, desires, and concerns related to the product and its packaging? Consider aspects like convenience, sustainability, safety, and aesthetics.

3. **Define the Problem:** What sustainability issues or challenges exist in the current packaging of the selected product? For example, it could be excessive plastic use, non-recyclable materials, or inefficient transportation.

4. **Ideate:** In this phase, brainstorm creative ideas for sustainable packaging solutions. You should focus on minimizing environmental impact while improving the user experience. Ideas could include using alternative materials, innovative opening/closing mechanisms, or eco-friendly labelling.

5. **Prototype:** Try to create rough prototypes or sketches of your packaging ideas. These do not need to be fully functional; the goal is to visualize the concepts and how they might work in practice.

6. **Test and Gather Feedback:** Present your prototypes to the class. Collect feedback and suggestions for improvement. How do the prototypes address the defined problem, and how do they enhance the user experience?

7. **Refine and Iterate:** Based on the feedback received, you should refine your packaging designs. Iterate on your ideas, adjusting to improve sustainability, user-friendliness, and other aspects.

Final Presentation: You should showcase your sustainable packaging solution. Explain how it addresses the identified problem, the materials used, and its impact on the environment.

Criteria:

- The students can demonstrate basic knowledge of sustainable packaging concepts. Identify common environmentally friendly packaging materials and recognize the need for reducing packaging waste: 1 pt.

- The students possess a solid understanding of sustainable packaging solutions. Describe the key principles of Lifecycle Thinking and Analysis (LTA) and identify the environmental impact of different packaging materials.: from 0 pt. (do not know) to 4 pt. (know all that asked).

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- The student applies knowledge to evaluate and select sustainable packaging solutions. Demonstrates the ability to adapt packaging choices based on product needs and understands the life cycle phases and considers environmental impact in decision-making.: from 0 pt. (don´t apply, demonstrate, and understand) to 2 pt. (apply, demonstrate, and understand).

- The students innovate new packaging solutions with a focus on sustainability. Optimize packaging choices for minimal environmental impact across the lifecycle and integrate sustainable packaging practices into broader business strategies.: from 0 pt. (unoriginal) to 4 pt. (never seen before).

- (Bonus) The design is original or offers a new twist by creating sustainable packaging solutions: from 0 pt. (unoriginal) to 2 pt. (never seen before).

CRITERIA	NOTATION				
	0	1	2	3	4
The students can demonstrate basic knowledge of sustainable packaging concepts. Identify common environmentally friendly packaging materials and recognize the need for reducing packaging waste.					
The students possess a solid understanding of sustainable packaging solutions. Describe the key principles of Lifecycle Thinking and Analysis (LTA) and identify the environmental impact of different packaging materials.					
The student applies knowledge to evaluate and select sustainable packaging solutions. Demonstrates the ability to adapt packaging choices based on product needs and understands the life cycle phases and considers environmental impact in decision-making.					
The students innovate new packaging solutions with a focus on sustainability. Optimize packaging choices for minimal environmental impact across the lifecycle and integrate sustainable packaging practices into broader business strategies.					

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NOTATION	/12

	Exercise #3 - Harnessing renewable energy for cooking
Pre-requisites	Knowledge of the sustainable technologies in the kitchen and how can we adapt and use different kind of appliances to cook taking advantage of the solar heat.
Time	1,5 hours
Tools	PC or Smartphone, internet connection, paper box, mirrors, foil paper, glue, etc…
Addressed skills	#4 Adopt sustainable practices in one's job
Addressed level of the skills	#4 Level 5: Develops and implements innovative sustainability solutions.
Objectives	3. Integrating environmentally conscious actions and behaviours into one's daily work routines and responsibilities to create well balanced meals according to nutritional needs. 4. Make choices that reduce the ecological footprint associated with job tasks, such as conserving resources, minimizing waste, and supporting environmentally friendly initiatives.

Instructions to the students:

In groups, carefully read the module and watch the link provided.
https://www.youtube.com/watch?v=DaiGiRqCTQw

After consulting links, create a handmade solar oven that you can use for dehydrating food or made recipes by slow cooking techniques.

Present a recipe made with your solar oven in 3 hours or less.

Criteria:

- The group can work efficiently and well-coordinated to reach the objectives. 1 pt. (build an oven).
- The oven is functional and capable to achieve proper temperature: from 0 pt.

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(unfunctional) to 4 pt. (perfectly functional).

- The group use recycled materials to build the appliance: from 0 pt. (non-recycled materials) to 4 pt. (all recycled materials).
- (Bonus) The recipe is original and capable to be done in 3 hours: from 0 pt. (unoriginal) to 2 pt. (never seen before).

CRITERIA	NOTATION				
	0	1	2	3	4
The group can work efficiently and well-coordinated to reach the objectives					
The oven is functional and capable to achieve proper temperature					
The group use recycled materials to build the appliance					
The recipe is original and capable to be done in 3 hours					
NOTATION	**/12**				

Comments:

A variation of this exercise could be to ask the students to buy ingredients and prepare the meal *in situ*. One half-day would be allowed to this exercise, then.

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FINAL TASK OF THE MODULE

FINAL TASK MODULE 3: Design of a sustainable menu	
Pre-requisites	Knowledge of sustainable food practices, energy-efficient cooking processes, composting, packaging reduction and adoption of sustainable technologies in professional kitchens.
Time	3 hours
Tools	PC or Smartphone, internet connection, optional kitchen tools
Addressed skills	#8 Develop a menu focused on seasonal ingredients, produced locally, using smaller amounts of animal products in dishes, and expanding plant-based dishes.
Addressed level of the skills	#8 Level 5: We can design a menu following the main principles of sustainability: healthy, seasonal, produced locally, using a small amount of animal products.
Topic area	This exercise is designed to help students think of words and concepts and see how they are related. They create a concept map of their topic, which may help them see ways to narrow their topic and arrive at the final task.
Objective(s)	1. To recognize factors, habits and food choices that influence our health, our planet, and our community. 2. To create well balanced meals according to nutritional needs.

Instructions to the students:

Carefully read the module and the presented Case Study.

After consulting links, create a menu (starter, main course, and dessert) attending to sustainable, circular, and waste reduction practices, as well as sustainable technologies and cooking processes in the kitchen. Don´t forget to do the technique recipe sheets to calculate the costs, leftovers, and profits from the menu.

By analysing LTA principles, use products with low impact on carbon prints, smart packaging solutions and sustainable practices, attending to seasonal and local ingredients.

Create a healthy menu using ingredients like these: cereals, vegetables, dry fruits, olive oil, etc…

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Criteria:

- The menu contains all the suggested ingredients: cereal, legumes, vegetables, dry fruits, olive oi, etc.… from your area: 1 pt. per ingredient.
- The menu is feasible and realistic: from 0 pt. (unrealistic) to 4 pt. (perfectly feasible).
- The menu is healthy: from 0 pt. (poisonous) to 4 pt. (healthy).
- (Bonus) The menu is original or offers a new twist to a well-established meal: from 0 pt. (unoriginal) to 2 pt. (never seen before).

SUGGESTED SCHEDULE

(In this part you can suggest a schedule for the teachers, following this template :)

HOURS	ACTIVITIES
3,5	Introduction and Chapter 1
1	Exercise 1
3	Chapter 2
1,5	Exercise 2
1,5	Chapter 3
1,5	Exercise 3
3	Final task

PEDAGOGICAL SUGGESTIONS AND GENERAL REMARKS

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(You can write there some pedagogical suggestions, additional materials, and general remarks to the teachers :)

- Use real-world examples to illustrate the principles of a circular economy and sustainable practices.
- Encourage students to think creatively about circular economy solutions in food production, packaging, and waste reduction.
- Engage students in a discussion about their perceptions of sustainability and its role in food production.
- Encourage students to think about the benefits of supporting local and sustainable food systems.
- Discuss the challenges faced by sustainable food producers and distributors.
- Discuss the role of consumers in driving demand for sustainable food products.
- Encourage students to reflect on the potential health and financial benefits of sustainable cooking.
- Discuss the potential for widespread adoption of sustainable cooking practices.
- Use visuals to illustrate the impact of energy consumption on the environment.
- Discuss the role of energy-efficient appliances.
- Encourage students to consider how energy efficiency can lead to cost savings.
- Highlight the positive impact on the environment.
- Introduce the concept of a "food waste diary" for students to track their own waste.
- Emphasize the role of creativity and resourcefulness in reducing food waste.
- Encourage critical thinking by asking students to weigh the advantages and disadvantages of different packaging types.
- Encourage students to research and present on a packaging reduction initiative they find inspiring.
- Discuss the potential for collective action to influence packaging practices.
- Discuss the scalability and accessibility of renewable energy sources.

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- Encourage students to analyse their own kitchens or kitchens they are familiar with for energy efficiency.
- Encourage students to think about their own experiences with local food and its benefits.
- Discuss how local food distribution contributes to food security.
- Encourage students to brainstorm solutions to the challenges discussed.
- Encourage students to consider the role of resilience in local food supply chains.
- Discuss potential solutions, such as diversification of products or distribution strategies.
- Encourage students to think about how they can actively participate in or support local distribution chains.
- Discuss the potential for students to create their own distribution chain projects.
- Encourage students to think critically about the balance between supply and demand.
- Discuss the implications of product availability on customer satisfaction and business success.
- Etc.

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