

Course
Environmental Ethics
TSC-2101-2
Secondary Cycle One



“The world faces a full-scale climate emergency that threatens the future of civilization on earth.”

Al Gore

Presentation of the Course *Environmental Ethics*

The course *Environmental Ethics* is designed to help adult learners deal competently with real-life situations that raise ecological issues whose impact they can see.

It encourages adult learners to consider the impact of human activities on the environment and to act accordingly. It enables them to determine the value they place on the environment and to understand the advantages of environmental balance, harmony and beauty.

By the end of the course, adult learners will have acquired essential scientific knowledge about the environment and will be aware that they are an integral part of it and that their actions have an impact on it. With a greater appreciation for the environment, they are more likely to act in an enlightened, appropriate, responsible, ethical and cooperative fashion.

Dealing With the Real-Life Situations

Dealing effectively with real-life situations is based on actions. These actions are grouped into categories and make use of a set of resources that include operational competencies and essential knowledge. During the learning process, adults are expected to construct knowledge related to these resources in order to be able to deal appropriately with their real-life situations.

The class of situations, categories of actions, operational competencies and essential knowledge constitute the compulsory elements of the course. These elements are explained in detail under their respective headings.



Class of Situations Addressed by the Course

This course addresses a single class of situations: *Ethical environmental choices*.

These situations raise ecological issues, encouraging adult learners to examine their behaviour in terms of environmental ethics. The ecological issues may be climatic phenomena, human activities or

technological incidents that come up in real-life situations such as maintaining a home, hiking, participating in a sport and choosing a means of transportation.

Class of Situations	Examples of Real-Life Situations
Ethical environmental choices	<ul style="list-style-type: none">▪ Evaluating the greenhouse gas emissions produced by his/her car▪ Maintaining a home▪ Family meals▪ Consumption▪ Nature interpretation walk▪ Choosing a means of transportation

Categories of Actions

The *categories of actions* are groups of actions that are appropriate for dealing with the real-life situations addressed in the course. *Examples of actions* are provided to illustrate the scope of the category in a variety of contexts.

Categories of Actions	Examples of Actions
<ul style="list-style-type: none"> ▪ Studying major ecological issues 	<ul style="list-style-type: none"> ▪ Becomes aware of the impact of international environmental policies ▪ Does research on the impact of technology on the environment ▪ Identifies the consequences of climate change ▪ Analyzes the relationships between the economy and environmental imbalances ▪ Explains the causes of the disappearance of certain species ▪ Detects the signs of an environmental problem
<ul style="list-style-type: none"> ▪ Observing indicators of an environmental imbalance in his/her immediate environment 	<ul style="list-style-type: none"> ▪ Explores the characteristics of environmental components and conditions ▪ Discovers the wealth of an environment ▪ Inventories the plant species in an environment ▪ Recognizes plant and animal species as environmental indicators ▪ Observes the effects of certain food production methods ▪ Perceives the changes in human behaviour related to environmental imbalance ▪ Detects sources of pollution in his/her environment ▪ Determines the natural resources essential to the survival of living organisms ▪ Situates the environment geographically and historically ▪ Calculates his/her ecological footprint

Categories of Actions	Examples of Actions
<ul style="list-style-type: none"> ▪ Contributing to the balance of the environment 	<ul style="list-style-type: none"> ▪ Takes his/her values and choices into account ▪ Plans emergency measures in the event of a natural disaster ▪ Plans the environmentally friendly use of consumer goods and resources ▪ Determines whether his/her activities have an impact on the balance of the environment ▪ Adopts voluntary simplicity ▪ Boycotts a product or merchant ▪ Stops using phosphates at home ▪ Takes public transportation ▪ Organizes an awareness campaign

Compulsory Elements and End-of-Course Outcomes

The compulsory elements are those that the teacher must absolutely take into account when designing learning situations.

Class of Situations

Ethical environmental choices

Categories of Actions

- Studying major ecological issues
- Observing indicators of an environmental imbalance in his/her immediate environment
- Contributing to the balance of the environment

Operational Competencies

Exercises critical and ethical judgment

- Compares information from different sources
- Uses precise criteria to evaluate the seriousness of a problem
- Bases his/her conclusions and position on an analysis of the problem
- Adopts ethical behaviour
- Takes appropriate action based on his/her values and choices

Cooperates

- Identifies everyday individual actions that contribute to the collective effort to protect the environment
- Develops common strategies
- Works toward the achievement of common goals

Essential Knowledge

- Concepts related to ecology
- Environmental problems and their effects
- Ethical use of resources
- Ways of dealing with major ecological issues

The end-of-course outcomes describe how adults make use of the compulsory elements to deal with the real-life situations addressed in the course.

End-of-Course Outcomes

In order to deal with the class of situations *Ethical environmental choices*, adult learners adopt a critical and cooperative approach that enables them to construct knowledge in the area of ecology and to understand local, national and international environmental problems and their effects, put them in perspective and take appropriate and ethical action.

When studying an environmental problem, adult learners compare information from different sources in order to form an opinion. They use their scientific knowledge to understand the issues at stake.

When observing the indicators of an environmental imbalance in their immediate environment, they use precise criteria to evaluate the seriousness of the problem and to understand the issues related to the ethical use of resources and the protection of the quality of the environment. They base their conclusions and position on an analysis of the facts, determining possible solutions and deciding which behaviours to adopt and which ones to avoid.

To contribute to the balance of the environment, adult learners use their scientific knowledge and news reports to identify everyday individual actions that contribute to the collective effort to protect the environment. They take appropriate action based on their choices and values. They work toward the achievement of common goals. Thus, they participate in the global effort to deal with environmental problems and the issues at stake. They share their knowledge, ideas and thoughts and explain what motivates them to adopt ethical behaviour. With their family and the community, they develop strategies to preserve the balance of the environment.

Evaluation Criteria

- Studies environmental problems objectively
- Closely observes indicators of an environmental imbalance in their immediate environment
- Contributes appropriately to the balance of the environment

Operational Competencies

The contribution of each operational competency is described in terms of the actions that are appropriate for dealing with the real-life situations in this course. These operational competencies are addressed in other courses and therefore all of the courses taken together contribute to their development.

In this course, only the following operational competencies are addressed: *Exercises critical and ethical judgment* and *Cooperates*.

Contribution of the Operational Competency *Exercises critical and ethical judgment*

The operational competency *Exercises critical and ethical judgment* consists in evaluating the personal and social problems addressed in the real-life situations with discernment and respect. It enables adult learners to open up to points of view that differ from their own points of reference and observations in order to form an opinion. It contributes to adult learners' representation of the problem, enabling them to decide whether a given intervention is justified. This competency is all the more important since these complex situations involve social as well as ecological issues.

Faced with an environmental problem, adult learners compare information from different sources and use precise criteria to assess the seriousness of the problem threatening the integrity of the environment and to determine priority actions. Adult learners use recognized scientific knowledge and an analysis of the facts to draw conclusions and take a position. In addition to looking for objective information, adult learners compare their values and judgment with the viewpoints of others or those conveyed in the media. They consider the advantages and disadvantages of certain practices in order to adopt ethical behaviour and take appropriate action based on their values and choices.

Contribution of the Operational Competency *Cooperates*

The operational competency *Cooperates* helps adult learners deal effectively with situations affecting the community. Every individual action contributes to managing and developing solutions to collective problems. This competency enables adult learners to cooperate in situations in which individual action is unlikely to succeed, in which synergy makes all the difference, in which the sharing of tasks, skills and responsibilities is essential. This competency makes it possible to coordinate actions within the family and the community.

Adult learners identify everyday individual actions that contribute to the collective effort to protect the environment. They take others' viewpoints into account and adjust their behaviour. Faced with an environmental problem, they share ideas to develop joint strategies and work to achieve common goals.

Essential Knowledge

Concepts related to ecology

- Environmental balance, ecosystem, food chain
- Biotic and abiotic factors
- Ecological indicators of the quality of the environment
- Ecological relationships within and between species
- Photosynthesis, water cycle, carbon cycle, oxygen cycle
- Ecological footprint

Environmental problems and their effects

- Climate change (energy consumption, greenhouse effect and global warming, desertification, droughts, natural disasters)
- Chemical and biological pollutants and their effects
- Air, water and soil quality

Ethical use of resources

- Energy conservation, biodiversity, overexploitation, sustainable development, introduction of undesirable species, overpackaging, impact of plastic bags on the environment, genetically modified organisms, genetic contamination

Ways of dealing with major ecological issues

- National and international movements, local and individual ethical movements

Attitudes

The following attitudes are provided as suggestions only. The development of these attitudes can help adults to become more competent in dealing with the real-life situations in this course.

Responsibility	Respect
Adult learners develop a sense of responsibility as they become aware of the social and environmental impact of their everyday actions.	Respect for the environment begins with respect for others in one's everyday actions.
Open-mindedness	
By being open-minded, adult learners see solutions they had previously missed. By opening up to others, they develop the solidarity needed to act effectively.	

Complementary Resources

The following resources are provided as suggestions only and consist of references that may be consulted in learning situations.

Social Resources	Material Resources
<ul style="list-style-type: none"> ▪ Health-care professionals and environmental experts ▪ Resource people and other people at the education centre ▪ Government services ▪ Public services ▪ Community organizations ▪ Family members ▪ Neighbours 	<ul style="list-style-type: none"> ▪ Nature interpretation guides ▪ Maps ▪ Maps of natural environments ▪ Diagrams of relationships in an ecosystem ▪ Observation and measuring instruments ▪ Camera ▪ Woodworking and gardening tools ▪ Art supplies ▪ Survey sheet ▪ Sheet for calculating ecological footprints ▪ Excerpts of zoning regulations ▪ Documentation on the environment ▪ Exhibitions, gardens, parks ▪ Crop farming, organic farming ▪ Horticultural, gardening and renovation centres ▪ Water purification plants ▪ Films about ecological issues ▪ Environmental protection Web sites

Contribution of the Subject Areas

The contribution of other subject areas, in particular knowledge related to Languages and to Mathematics, Science and Technology, is also useful for dealing with the real-life situations in this course. The elements identified for each subject area are not compulsory and do not constitute prerequisites.

Subject Area: Languages

Course (Secondary): *Informed Choices*

- Categories of actions related to environmental issues in the class of situations *Using language to explore current issues in the media*

Subject Area: Mathematics, Science and Technology

Program of Study: *Mathematics*

- Interpreting and inferring information based on statistical data, histograms or diagrams
- Interpreting and organizing qualitative or quantitative data
 - Classifying, comparing and grouping together elements related to the environment
- Using percentages
- Using geometry to obtain more accurate information
 - Estimating distance and surface measurements
 - Using proportions
- Interpreting a map or scale drawing to locate an environment or situate an event

Program of Study: *Computer Science*

- Searching for information on the Internet or in a data bank
 - Using a search engine or portal
 - Consulting newspapers and other media
 - Making requests
- Producing and transmitting information about the environment
- Corresponding by e-mail

Andragogical Context

The course *Environmental Ethics* enables adult learners to construct scientific knowledge in the area of ecology in order to assess the issues at stake in environmental imbalances. It enables them to determine where they stand as members of a community, responsible for maintaining the natural balance of the environment at the local, national and global levels. This course encourages adult learners to adopt a critical approach and to use their analytical skills to find solutions to environmental problems. It focuses on investigation, reflection and cooperation and encourages them to adopt attitudes of accountability and commitment.

Adult learners adopt a more accurate representation of the natural environment, which enables them to act in an enlightened and respectful manner. They are required to develop their sense of observation to perceive signs of imbalance in their immediate environment, for example a change in the geographic distribution of a species, an algae bloom or the early arrival of a species in spring or unprecedented heat waves. Thus, they find information to support their understanding of environmental concepts. The teacher facilitates investigation, reflection, analysis and action, which consolidate the adult learner's approach. He or she may raise questions that encourage the adults to reflect on their use of critical judgment in their consumer habits and their everyday behaviour. The course focuses on synergy and cooperation. Adult learners are encouraged to consider the personal and social problems addressed in the real-life situations with discernment and respect. They open up to other viewpoints in order to form an opinion.

Adult learners acquire scientific concepts in the area of ecology by gathering, interpreting and comparing data. They enhance the information in order to better define the problems and evaluate them scientifically. They develop critical and ethical judgment in assessing individual and collective actions aimed at maintaining a global environmental balance. The education centre becomes a centre of action, since the course encourages adult learners to react appropriately to environmental problems. They exchange viewpoints and knowledge and collaborate with their peers on the shared goal of preserving nature. All of this collaborative work strengthens adult learners' sense of belonging to the environment.

Learning Situation

The learning situation that follows is provided as an example to show teachers how the principles of the education reform can be applied in the classroom.

It is authentic in the sense that it addresses a real-life situation (taken from the class of situations in the course) that adults may find themselves in. It is sufficiently open and comprehensive to allow adult learners to explore several important aspects related to dealing with this real-life situation.

The examples of actions presented in the course help the teacher to identify those actions that an adult would take to deal with the real-life situation. The teacher can then refer to these examples in order to develop pertinent learning activities.

The learning situation is organized in terms of the three steps of the teaching-learning process, which are as follows:

- planning learning
- actual learning
- integrating and reinvesting learning

These steps highlight the principles of the education reform insofar as they encourage adults to be active, to reflect on their learning and to interact with their peers when the learning context is suitable. They include learning activities and may also include evaluation activities intended to support adults in the learning process.

These activities help learners to construct knowledge related to the compulsory elements of the course that are targeted by the learning situation concerned: one or more categories of actions, essential knowledge and the actions of the operational competencies associated with the categories of actions.

The example provided also refers to certain teaching strategies—pedagogical methods and techniques—that can be selected according to the learners, the context and the learning environment. Certain learning strategies may also be suggested, as well as a variety of material and social resources.

Example of a Learning Situation

Calculating His/Her Ecological Footprint

The situation proposed in the class *Ethical environmental choices* is an assessment of the impact of the adult learner's personal consumer habits on nature. This learning situation focuses on a study of the impact of human activities on environmental balance. Dealing with this situation requires the use of the operational competency *Exercises critical and ethical judgment*. In the course *Environmental Ethics*, adult learners explore the categories of actions *Studying major ecological issues* and *Contributing to the balance of the environment*.

This learning situation is authentic, since adult learners look for facts in order to exercise critical judgment and assess the impact of their personal actions on nature, and choose personal behaviours to adopt or avoid. It also makes it possible to adopt a cooperative approach in order to take measures to reduce the negative impact on the education centre.

The teacher takes advantage of recent articles in different newspapers or magazines to spark an informal discussion about climate change. This discussion will bring the adult learners up to date on the causes of global warming. Then, in a formal lecture, the teacher explains the scientific principles underlying the greenhouse effect and how certain human behaviours are partly responsible.

The adult learners are then able to briefly inventory the things they own (e.g. lawnmower, chain saw, car, furnace) that emit greenhouse gases. Thus they become aware that their own actions have an impact on the environment. The teacher takes this opportunity to explain the concept of ecological footprint as an indicator of a

person's influence. This learning situation enables adults to use the operational competency *Exercises critical and ethical judgment*.

Then, the adult learners assess their ecological footprint by consulting Web sites of government agencies, lobby groups, scientific journals, recognized scientists and other individuals. With the teacher's help, they construct a summary table of the elements used in the evaluation of the ecological footprint: housing, transportation, purchases, waste, etc. Each element in the table is discussed and reviewed with the teacher, which enables the adult learners to understand the impact of certain behaviours on nature.

A group discussion makes it possible to add to the list of effective behaviours. Each participant can choose behaviours to adopt and individual and collective actions to take at home and at the education centre.

Elements of the Course Addressed by the Learning Situation

Class of Situations	
Ethical environmental choices	
Learning Situation	
Calculating His/Her Ecological Footprint	
Categories of Actions	
<ul style="list-style-type: none"> Studying major ecological issues Contributing to the balance of the environment 	
Operational Competencies	Essential Knowledge
<ul style="list-style-type: none"> Exercises critical and ethical judgment Cooperates 	<ul style="list-style-type: none"> Concepts related to ecology Environmental problems and their effects Ethical use of resources Ways of dealing with major ecological issues
Complementary Resources	
<ul style="list-style-type: none"> Newspaper and magazine articles The Internet 	



