

Potential Learning Objectives

To help orient students we present below our reflections on the types of learning and development of skills that would be expected from students by the end of their training. These learning objectives are by no means set in stone, as each student's interests and level of training will modify these. We offer these in the spirit so that students will appreciate what is required to tackle the overwhelming problems that face life on the planet. In addition, various tools can be used to meet these objectives, including course work, projects, etc...

The overarching learning objectives are to:

- provide a basis for applying integrative, inter-disciplinary approaches for understanding and analyzing environmental problems in a way that reflects their complexity, and informs effective policy making and implementation
- provide opportunities for learning through application of theory and analytic techniques to real-life environmental problems, and interaction with peers from a range of disciplines
- to speak thoroughly and convincingly on specific environmental issues
- to deepen, articulate, and show the consequences of a sense of personal responsibility for life's prospects
- provide opportunities to develop the ability to think critically, and to effectively communicate ideas, both through written work and oral presentations
- provide the ability of students to become leaders in transforming environmental thought, research, practise and to make inroads into the major problems of the day

By the end of their degree, students will be able:

- 1) to describe the major impacts that humans have on the environment and to describe the major reasons why these occur; provide an understanding of some critical contemporary environmental problems, and of the political-institutional context in which environmental policies are formulated and implemented;
- 2) to describe and appreciate the various ethical and moral systems underlying current human activities as it refers to the environment as well alternative ways of thinking about the role humans have on the planet;
- 3) to appreciate, criticize, and use the IPAT(E) framework for thinking about personal and policy responses of the impact of these alarming environmental conditions;
- 4) to describe and appreciate the strengths and weaknesses of neo-classical economics as a means of thinking about the human-environment interface;
- 5) to describe and appreciate the strengths and weaknesses of alternative economic systems (e.g., ecological economics) and their potential for providing a foundation for thinking about policy. We ask some important questions:
 - a. how human beings in pursuit of material well-being have managed to break the traditionally close relationship between ecological and economic cycles

- b. what point in the human economic enterprise as a whole becomes simply too large for the biosphere to tolerate
 - c. who has really benefited from economic growth, and what hidden ecological and social costs growth has entailed
 - d. how many jobs can be created, but which jobs should be created
 - e. how fast technology can develop, but which technologies should be encouraged and how that should be done
 - f. how to increase blindly the total supply of new goods and services, but which goods and services should be produced and sold, which are genuinely “goods” as distinct from “bads” or “regrettables”
 - g. what alternative policies might allow the economy to find itself again at peace with the biosphere upon which life itself ultimately depends
- 6) to understand the functioning of the main domestic legal instruments that address our interaction with the environment;
 - 7) to appreciate how various stakeholders engage these legal instruments;
 - 8) to describe and appreciate the strengths and weaknesses of the main policy tools used currently in framing environmental policy and discourse (i.e., risk assessment, cost-benefit analysis, risk management) as well as alternative methods for framing environmental policy;
 - 9) to understand the strengths and weaknesses of some of the policy tools often used in environmental policy, such as risk analysis and cost/benefit analysis frameworks;
 - 10) to appreciate the role of energy in society, the associated problems and prospects for the future;
 - 11) to be able to articulate in *writing*, and provide appropriate arguments as appropriate, what actions can be taken to remedy a major environmental problem;
 - 12) to identify the major factors that influence Population, Affluence, and Technology;
 - 13) to describe the impact of Population, Affluence, and Technology and their interactions on the environment;
- 1) to describe and appreciate the major environmental problems and impacts that humans have on the environment (e.g., climate change, air and water pollution, environmental toxics, loss of species diversity), their causes and the key factors that are associated with these impacts, and plausible/feasible options to mitigate these impacts;
 - 2) to appreciate and criticize various frameworks for thinking about personal and larger-scale policy responses to environmental impacts and be able to propose viable alternative solutions that are based on thorough analysis with explicit statement of all assumptions
 - 3) to apply integrative, inter-disciplinary approaches for understanding and analyzing environmental problems in a way that reflects their complexity, and the interactions between scientific, technological, political-institutional and human factors that contribute to these problems and informs effective policy making and implementation;

- 4) to provide opportunities to develop the ability to think critically, and to communicate the results of environmental analysis effectively and in a way that is understandable by lay audiences.
- 5) to provide opportunities for learning through application of theory and analytic techniques to real-life environmental problems, and interaction with peers from a range of disciplines
- 6) to describe and appreciate the current energy and transportation systems and their impact on the environment

In addition to the above learning objectives, by the end of their degree students will be able to do the following in pursuing a dissertation in an identified environmental policy area:

- 14) to describe the myriad complexities of the environmental problem under consideration;
- 15) to describe, analyse, and assess the strengths and limitations of, and synthesize the ethical foundations as well as legal and justice claims underlying implicit and explicit environmental policies related to the problem under consideration;
- 16) to describe the processes at various levels (e.g., personal, citizen movements, local and federal governments, international) related to the environmental problem at hand; and
- 17) to propose, upon critical assessment, various options to solve the environmental problem at hand by making use of a wide range of policy tools, such as risk analysis and cost/benefit analysis, and to analyse the potential impacts that these options have on the environment, associated ecological systems, as well as human and other species.