# HVPE ASSIGNMENT-2

| | |
|---|---|
| Name | Yeshwanth Chala |
| Pin NO: | 19005A0505 |

## 1. Intellectual Property Rights

Intellectual property rights are the legal rights that cover the privileges given to individuals who are the owners and inventors of a work, and have created something with their intellectual creativity. Individuals related to areas such as literature, music, invention, etc., can be granted such rights, which can then be used in the business practices by them.

The creator/inventor gets exclusive rights against any misuse or use of work without his/her prior information. However, the rights are granted for a limited period of time to maintain equilibrium.

The following list of activities which are covered by the intellectual property rights are laid down by the World Intellectual Property Organization (WIPO) –

- Industrial designs
- Scientific discoveries
- Protection against unfair competition
- Literary, artistic, and scientific works
- Inventions in all fields of human endeavor
- Performances of performing artists, phonograms, and broadcasts
- Trademarks, service marks, commercial names, and designations
- All other rights resulting from intellectual activity in the industrial, scientific, literary, or artistic fields

### Types of Intellectual Property Rights

Intellectual Property Rights can be further classified into the following categories –

- Copyright

- Patent
- Patent
- Trade Secrets, etc

# 2.Code of ethics

A code of ethics is a guide of principles designed to help professionals conduct business honestly and with integrity. A code of ethics document may outline the mission and values of the business or organization, how professionals are supposed to approach problems, the ethical principles based on the organization's core values, and the standards to which the professional is held

Both businesses and trade organizations typically have some sort of code of ethics that their employees or members are supposed to follow. Breaking the code of ethics can result in termination or dismissal from the organization. A code of ethics is important because it clearly lays out the rules for behavior and provides the groundwork for a preemptive warning.

To ensure that the aims and principles of the code of ethics are followed, some companies appoint a compliance officer. This individual is tasked with keeping up to date on changes in regulation codes and monitoring employee conduct to encourage conformity.

This type of code of ethics is based on clear-cut rules and well-defined consequences rather than individual monitoring of personal behavior. Despite strict adherence to the law, some compliance-based codes of conduct do not thus promote a climate of moral responsibility within the company.

# 3. Globalization

Globalization is the spread of products, technology, information, and jobs across national borders and cultures. In economic terms, it describes an interdependence of nations around the globe fostered through free trade.

On one hand, globalization has created new jobs and economic growth through the cross-border flow of goods, capital, and labor. On the other hand, this growth and job creation is not distributed evenly across industries or countries. Specific industries in certain countries, such as textile manufacturing

in the U.S. or corn farming in Mexico, have suffered severe disruption or outright collapse as a result of increased international competition.

Globalization motives are idealistic, as well as opportunistic, but the development of a global free market has benefited large corporations based in the Western world. Its impact remains mixed for workers, cultures, and small businesses around the globe, in both developed and emerging nations.

Corporations gain a competitive advantage on multiple fronts through globalization. They can reduce operating costs by manufacturing abroad. They can buy raw materials more cheaply because of the reduction or removal of tariffs. Most of all, they gain access to millions of new consumers.

Globalization is a social, cultural, political, and legal phenomenon.

- Socially, it leads to greater interaction among various populations.
- Culturally, globalization represents the exchange of ideas, values, and artistic expression among cultures.
- Globalization also represents a trend toward the development of single world culture.
- Politically, globalization has shifted attention to intergovernmental organizations like the United Nations (UN) and the World Trade Organization (WTO).
- Legally, globalization has altered how international law is created and enforced.

## The History of Globalization

Globalization is not a new concept. Traders traveled vast distances in ancient times to buy commodities that were rare and expensive for sale in their homelands. The Industrial Revolution brought advances in transportation and communication in the 19th century that eased trade across borders.

The think tank, Peterson Institute for International Economics (PIIE), states globalization stalled after World War I and nations' movements toward protectionism as they launched import taxes to more closely guard their industries in the aftermath of the conflict. This trend continued through the Great Depression and World War II until the U.S. took on an instrumental role in reviving international trade.

Globalization has since sped up to an unprecedented pace, with public policy changes and communications technology innovations cited as the two main driving factors.

One of the critical steps in the path to globalization came with the North American Free Trade Agreement (NAFTA), signed in 1993. One of NAFTA's many effects was to give American auto manufacturers the incentive to relocate a portion of their manufacturing to Mexico where they could save on the costs of labor. As of February 2019, the NAFTA agreement was due to be terminated, and a new trade agreement negotiated by the U.S., Mexico, and Canada was pending approval by the U.S. Congress.

Governments worldwide have integrated a free market economic system through fiscal policies and trade agreements over the last 20 years. The core of most trade agreements is the removal or reduction of tariffs.

This evolution of economic systems has increased industrialization and financial opportunities in many nations. Governments now focus on removing barriers to trade and promoting international commerce.

Outsourcing by companies brings jobs and technology to developing countries. Trade initiatives increase cross-border trading by removing supply-side and trade-related constraints.

Globalization has advanced social justice on an international scale, and advocates report that it has focused attention on human rights worldwide.

# 4. Environmental Science

**environmental science** is the field of science that studies the interactions of the physical, chemical, and biological components of the environment and also the relationships and effects of these components with the organisms in the environment. The field of environmental science can be divided into three main goals, which are to learn how the natural world works, to understand how we as humans interact with the environment, and also to determine how we affect the environment. The third goal of determining how humans affect the environment also includes finding ways to deal with these effects on the environment.

# Interdisciplinary Field

Environmental science is also referred to as an **interdisciplinary** field because it incorporates information and ideas from multiple disciplines. Within the natural sciences, such fields as biology, chemistry, and geology are included in environmental science. When most people think of environmental science, they think of these natural science aspects, but what makes environmental science such a complex and broad field is that it also includes fields from the social sciences and the humanities.

The social science fields that are incorporated into environmental science include geography, economics, and political science. Philosophy and ethics are the two fields within the humanities that are also included in environmental science. By combining aspects of the natural sciences, social sciences, and the humanities, the field of environmental science can cover more concepts and also examine problems and topics from many different points of view.

# Importance of Environmental Science

At this current time, the world around us is changing at a very rapid pace. Some changes are beneficial, but many of the changes are causing damage to our planet. The field of environmental science is a valuable resource for learning more about these changes and how they affect the world we live in.

Let's examine a major change that is currently occurring and its relationship to environmental science. The large change is the dramatic increase in the number of humans on earth. For most of human history, the population has been less than a million people, but the current population has skyrocketed to over seven billion people. This equals out to seven thousand times more people!

Due to this increase in the human population, there has also been an increase in pressure on the natural resources and ecosystem services that we rely on for survival. **Natural resources** include a variety of substances and energy sources that we take from the environment and use. Natural resources can be divided into renewable and nonrenewable resources. **Renewable natural resources** are substances that can be replenished over a period of time, such as sunlight, wind, soil, and timber. On the other hand, **nonrenewable natural resources** are substances that are in finite supply and will run out. Nonrenewable resources include minerals and crude oils.

Due to the increase in the human population, natural resources are being used up at a more rapid rate than in the past. Although renewable natural resources can be replenished, when they are used too rapidly, they cannot be replenished fast enough to meet human demand. Even worse, when nonrenewable natural resources are used too rapidly, they become closer to running out completely and being gone forever.

Natural resources have been referred to as the 'merchandise' produced by the environment, and in this respect, ecosystem services are the 'facilities' that we rely on to help produce the merchandise. **Ecosystem services** are the environment's natural processes that provide us with the resources we need to support life. Common ecosystem services include water and air purification, nutrient cycling, climate regulation, pollinating of plants, and the recycling of waste. Just like some natural resources, ecosystem services are also limited and can be used up if not regulated.

Now, let's tie it together and think about population growth and its influence on both natural resources and ecosystem services. As the human population increases and natural resources and ecosystem services are used rapidly and potentially degraded, the future of humans on earth is in jeopardy. This is one major example of why environmental science is important and valuable.

# 5. Engineering as social experimentation

**Engineering** itself is based on the improvement of current life, whether in terms of technology or efficiency or availability with less financial efforts. The process of engineering lets you go through a series of different experiments when it comes to practical use. Though it is not like an experiment in laboratory under controlled conditions, which is done while learning, an engineer should be ready to do the same on a social scale involving human subjects.

**Experimentation** is the main aspect of designing process. An engineer who is ought to design the parts of a car, will be able to understand the result only when it is tested practically. Preliminary simulations are conducted from time to time to know how the new concept of engineering acts in its first rough design. Materials and processes are tried out, usually employing formal experimental techniques. Such tests serve as a basis, which help in developing the final product.

# Engineers as Experimenters

In the process of developing a product, an engineer generally learns through experimentation. To simply put, a trial and error method is the mostly used one to obtain results, but that goes with some calculations. Hence, we can say that, primarily any experiment is carried out with partial ignorance. Even the outcomes of the experiments may not be as expected. An engineer should always be ready for the unexpected output. The improvement of current prototype will lead to some change which may or may not be fruitful.

The experiments made are mostly subjected to risks though the project is small. Many uncertainties are likely to occur depending upon the changes that might occur in the altered model or materials purchased. At times, when the materials were subjected to continued stress and strain, or some process, it might happen that the nature of the substance changes which might lead to some destruction. These are the areas of experiment where nothing is really predictable.

## Responsibility in Experimentation

Although the experiments and the results are uncertain, there are few things which an engineer is ought to keep in mind. Consider the following points which are related to the moral aspects of human behavior –

- To maintain the safety of human beings.
- To procure their rights of consent.
- To keep them aware regarding the experimental nature of the project.
- To warn them about the probable safety hazards.
- Should monitor the results of the experiment continuously.
- Having autonomy in conducting experiments.
- Accepting accountability for the results of the project.
- Exhibiting their technical competence and other characteristics of professionalism