

Stage 1 in which the goal and overall scope of the research work get defined term...

[Technology](#), [Development](#)



Term Paper

1. Lesson 4 - a. Ingeo journey refer to a journey where our responsibilities towards environment is increasing and we are taking various measures and adopting various technologies to improve the situation. To some extent we are able to reduce adverse effect on environment but this journey will go on. The concept can be implemented on three “ shelf in the bookcase”. Solar energy technology help in saving the electricity and also reduce the chemicals released while production of electricity. We can save a huge quantity of water that goes in production of electricity. The same concept work in case of renewal of feedstock and synthetic efficiency. Better technology help in providing better protection to environment.

b. Three major principles applied in the Ingeo production process are:

1. Profiling – past, present and future: this process suggest the evaluation of results and their impact on environment pre implementation of technology and post technology implementation. It helps in assessing the effectiveness of technology in reducing the harmful substance release to environment.

2. Dealing with Innovation: This process suggested dealing with new innovation in Life cycle assessment. Life cycle assessment is a tool that helps in measuring the impact of any stage of product development on environment. This LCA cycle is consist of four stages:

Stage 2: This stage involves inventory analysis which includes flow of natural resources along with raw material and substance released during production.

Stage 3: this stage is focused on impact assessment. Based on analysis

conducted in stage two this step evaluates the potential threat to environment. This stage identifies all the categories that are posing threat, indicators to those categories and also the characterization models.

Stage 4: Interpretation refers to a technique in which all the gathered information get quantify and check to provide final results. All the results from above stages summarized to give proper conclusion and potential impact on the environment .

3. Green Power Options: Ingeo process given thrust on those technologies that are environment friendly and produce less amount of carbon and other harmful substances.

c. Ingeo is designed to replace those products and processes which causes for environmental damages. For example recyclable material; ingeo analyzed various types of drinking cups along with its own manufacture cups with the help of LCA. Its cups are environment friendly.

Pier Reviewed: Pier reviewed article refer to an article analyzed and critically examined by very qualified individuals. It is important get more depth on the subject with credible and high standard information.

Lesson 5: a. Natural Step framework is a complete model for scheduling and organizing things in a composite system. This framework helped various organizations in bringing sustainable change in their strategic, tactical planning by creating permanent transformation. Four system conditions are as follow:

Concentration of matters dig out from earth shell – to sustain it is important not to contribute towards any job/work that increase the matters dig out from earth shell.

Concentration of matters created by society – we should put our efforts in reducing the production of various chemicals and other harmful substances.

Degradation by physical means – we should not involve in such activities that disturb natural processes.

People should not get involve in those activities that weaken human capacity to fulfill their day to day needs.

b. Backcasting – this concept is linked to sustainable development. This process start from defining the vision that needs to be achieved in future. The next thing to do is to fulfill your vision what all things need to be done today so that we can achieve the vision tomorrow. We can take multiple scenarios and do backcasting to analyze the success. With the help of backcasting we can ensure sustainable development.

c. Systems Thinking – it refer to all divisions of the system, how they communicate and how they maintain relationship. It is very important to understand how system thinks. It will give you idea to think in same way else one cannot resolve a single issue and will waste once time in understanding different meanings.

Lesson 8: a. the article is focusing on relationship between living being and nature. In the article writer tries to explain how we are affecting the nature and not obliging to the concepts of ethics. The argument made by the author is “ nature always opposes artificial environment and try to make this earth that is not affected by human.

b. the article provide detail of history and how it impacted human relationship with nature. Author mentioned that how classical theories of

ethics were fails to protect the environment. At the beginning religious theory that describe the role of creator and creator. Further in 18th century, scientific revolution gave wings to mechanistic paradigms. 20th century gave birth to physics theory i. e. theory of relativity, and in 1960 the industrial impact. By each step human destroy the nature and go against the law establish by nature. In present situation, sustainability concepts that are beneficial for all systems could be a great solution. It helps in protecting the environment. The concept of environmental ethics was established when classical ethics were fail to protect the environment.

Lesson 9: over the period of time we have seen major changes in the environment which are resulting in lot of calamities like Tsunami, Japan crisis and various others like frequent earthquakes, flooding and the like. All these are bringing a warning to humankind; to change in their actions. If things will go in the same way; one day will come when nature will be completely destroy and there will be no place for human to survive. In the past classic ethics were mainly focused on human. Now with the change the new concept has emerged that is environmental ethics. All ethics described in the past were anthropogenic in nature means focused on human impact on the environment. Now it is changed to what need to be done to protect the environment. Environmental ethics are adding one more dimension of responsibility that individual is having towards the environment. If all people adopt some sustainable practices; a big difference can be done.

The role of stewardship towards environment is stand for the ethic that represent a proper planning, strategy and management by using all advance technology, theories, processes and other resources to protect the

environment.

2. American Society of Civil Engineers is dedicated for the development and their vision according to them is to provide a diverse development for the nation. The society contributes in the development through a number of construction works related to water quality, drainage, irrigation, urban development and a number of different other areas. An array of engineers is dedicated for these development works and the society has been accomplishing their goals since a long time.

American Institute of Chemical Engineers is a nonprofit organization at Yale which is dedicated to develop and research in the field of chemical engineering. A huge team consisting fifty seven thousand members is dedicated and working to achieve the Excellency in their mission. The organization has contributed in the development of industries, academic and several other areas.

3. Mining and Ore Processing:

Summary of Problem: Mining and Ore processing industry involve in extracting gems, metal and minerals from the earth crust. The size of operation varies from small to large depending upon type of extract they are involved. Operations that are involve in extracting heavy metal and radioactive components are posing a danger to the environment. The component released in this extraction process can be very dangerous to human health. Mercury and lead are two hazardous components that are found in with these metals. The ore get crashed and heated at certain temperature, In order to obtain pure metal. While heating, mercury gets diluted and vaporized which further collected. If process not done effectively,

mercury can get vaporized in atmosphere which is very harmful. Waste material from mining where mercury is present can be very harmful if not disposed properly.

Solution to Problem: the problem can be mitigated by working with two main bodies involved in the process; one is government and the second is with mine operators. Both bodies can adopt new green chemistry and engineering practices to fight with the problem.

Mining Operators – mining operators need to identify new equipments available that help in reducing the harmful effect of chemicals. The harmful chemical or gases further can be clubbed with some other chemicals to reduce the side effects. The approach that needs to be adopted by operators is refining and modifying existing processes. They should use very strict and defined processes so that no mercury vapor gets mixed with atmosphere by any means. Disposal of waste materials and rocks having mercury along.

Government – Government can play a major role in controlling the pollutants by making new standards and policies. To reduce the impact of hazardous materials on environment, government needs to enforce new reformed policies and processes that should be properly implemented by mining operators.

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